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FIG. 1

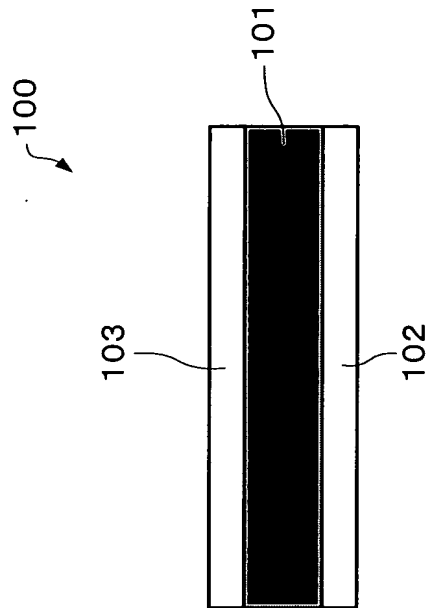


FIG. 2

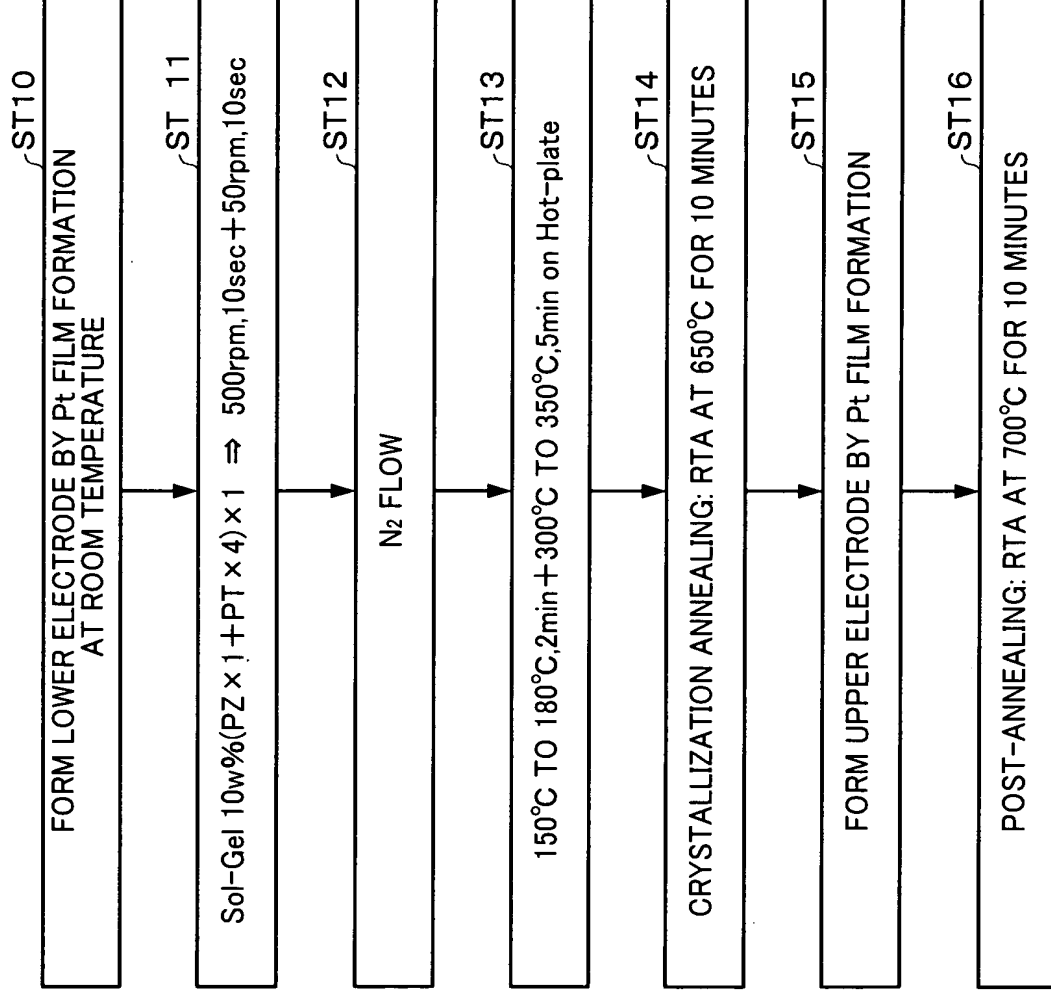


FIG. 3

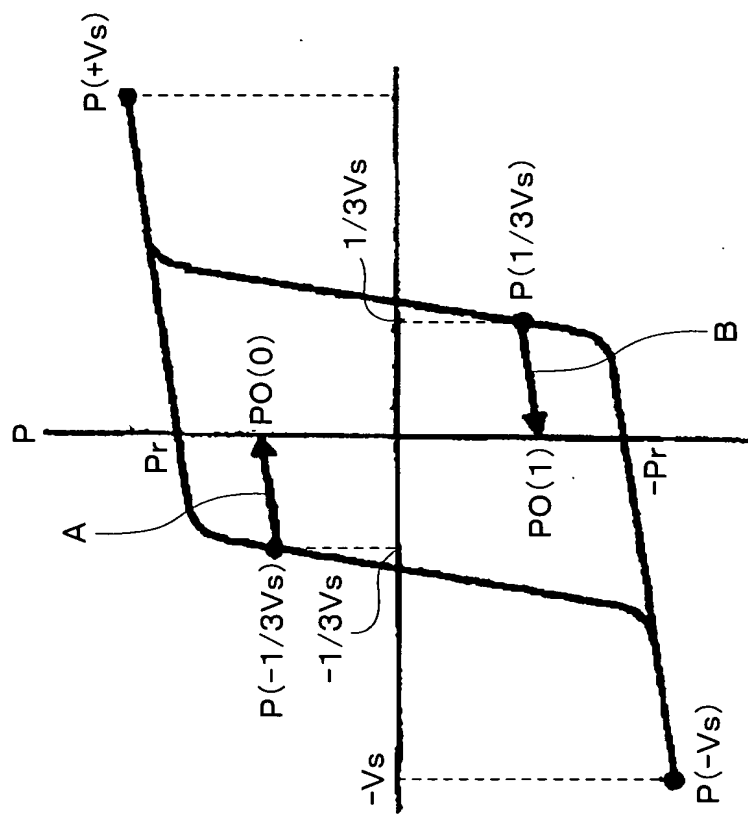


FIG. 4A

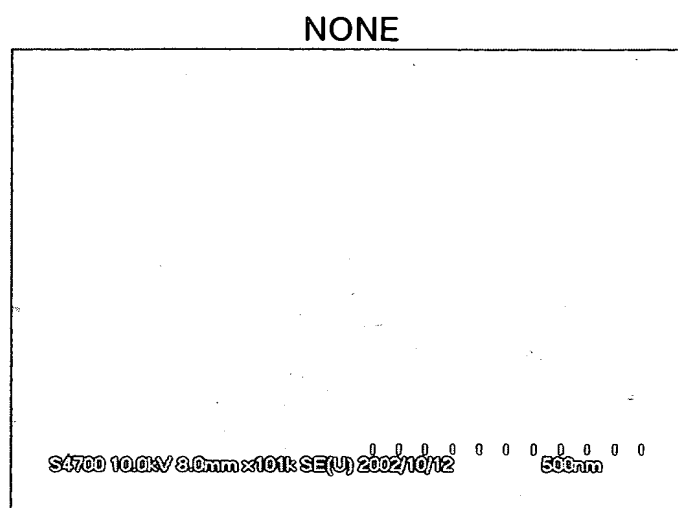


FIG. 4B

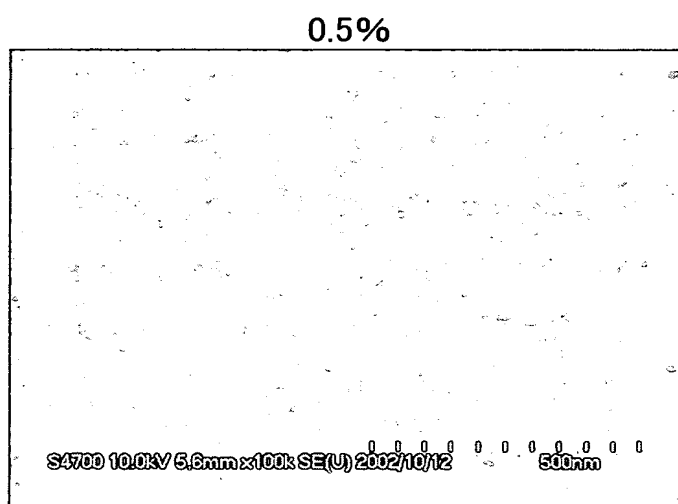


FIG. 4C

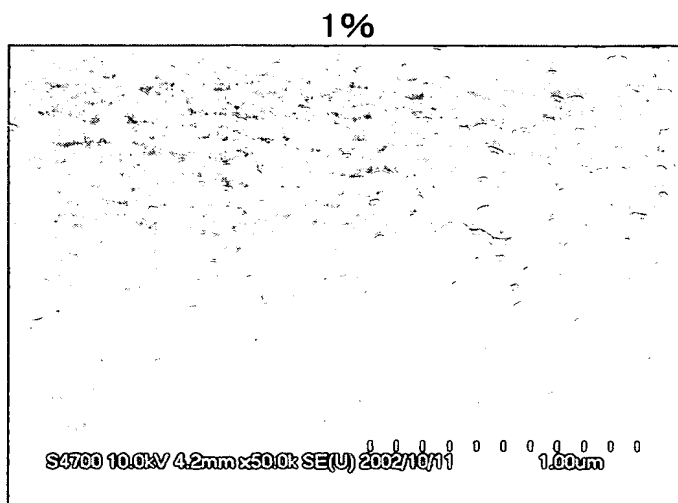


FIG. 5A

NONE

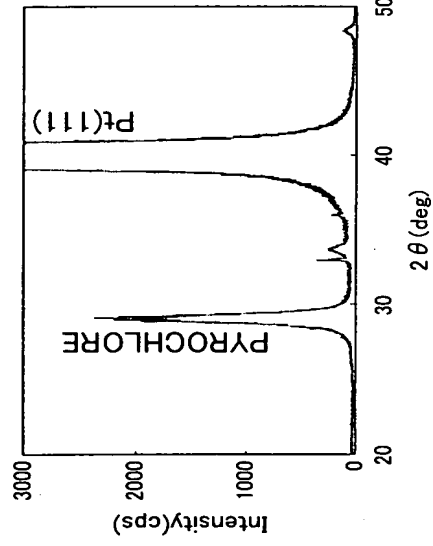


FIG. 5B

0.5%

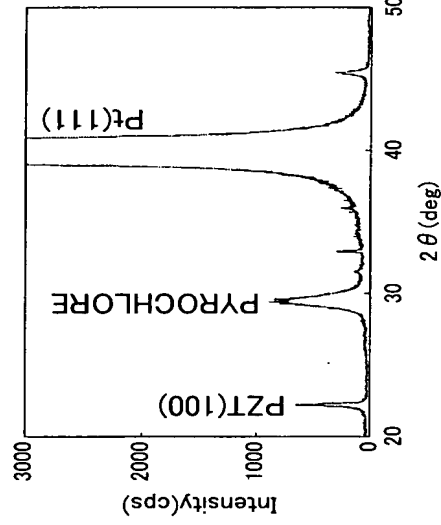


FIG. 5C

1%

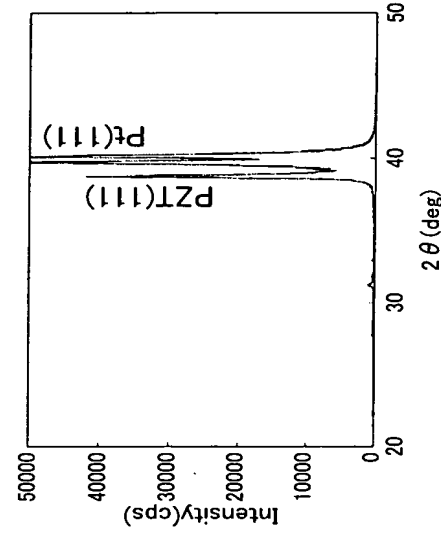


FIG. 6A

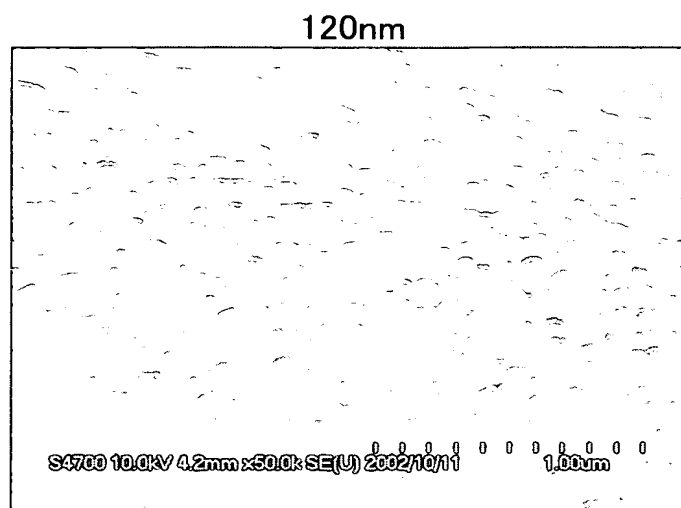


FIG. 6B

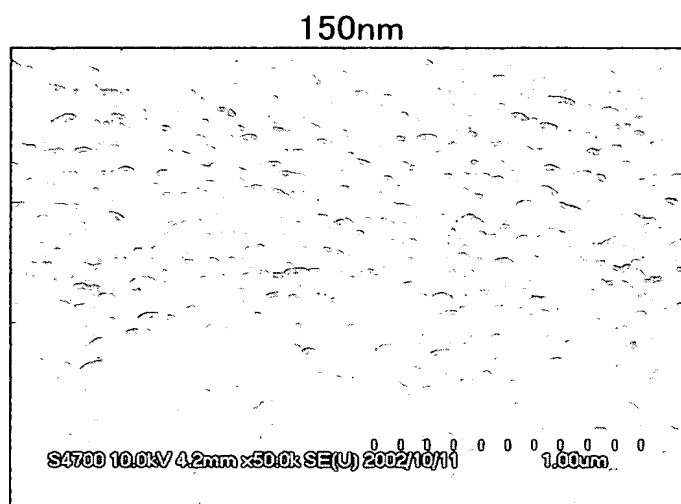


FIG. 6C

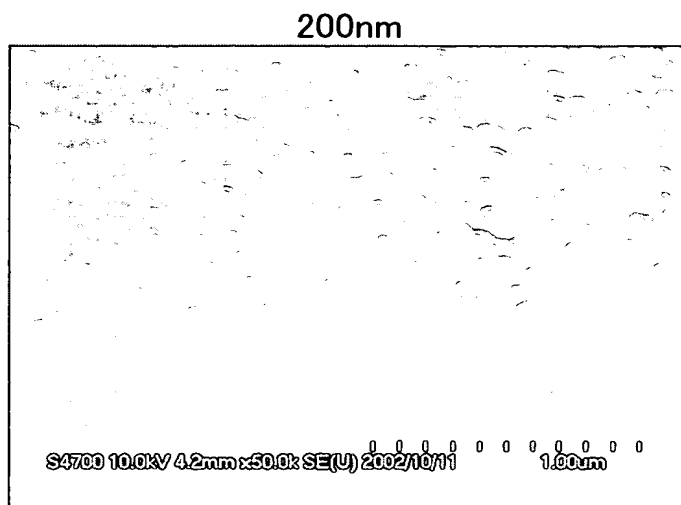


FIG. 7A

120nm

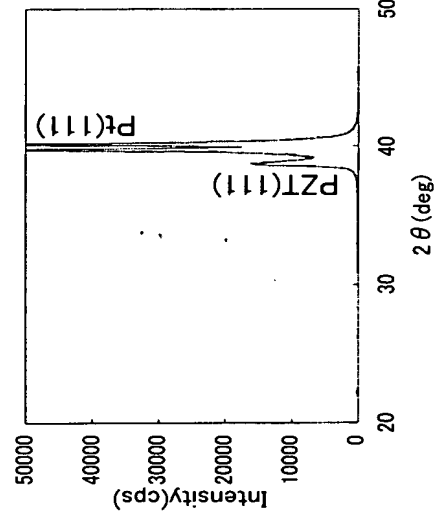


FIG. 7B

150nm

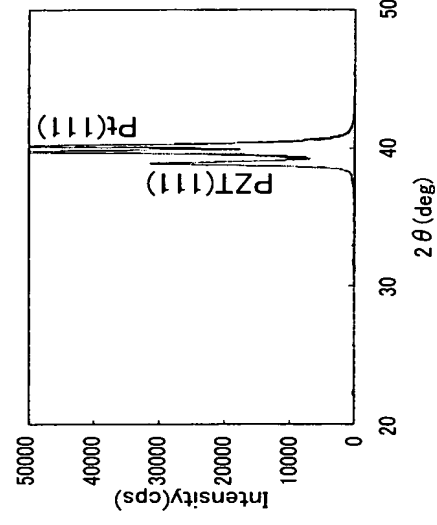


FIG. 7C

200nm

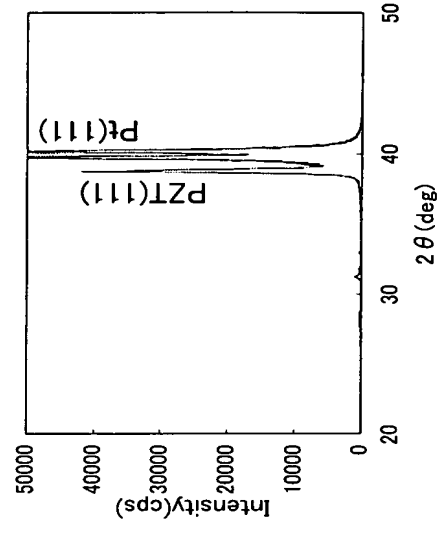


FIG. 8A

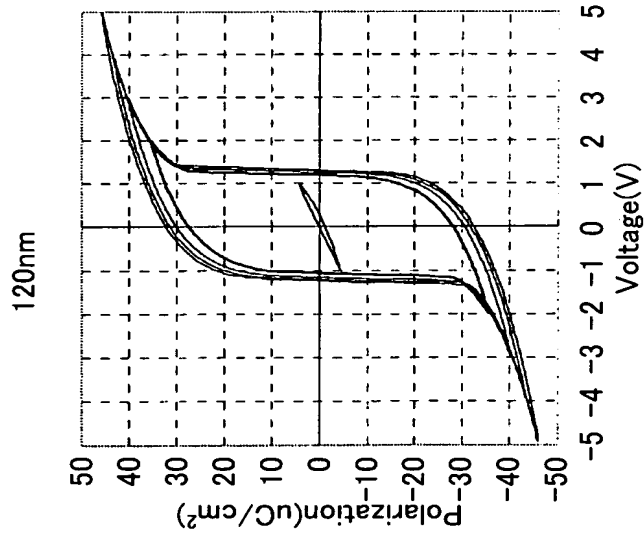


FIG. 8B

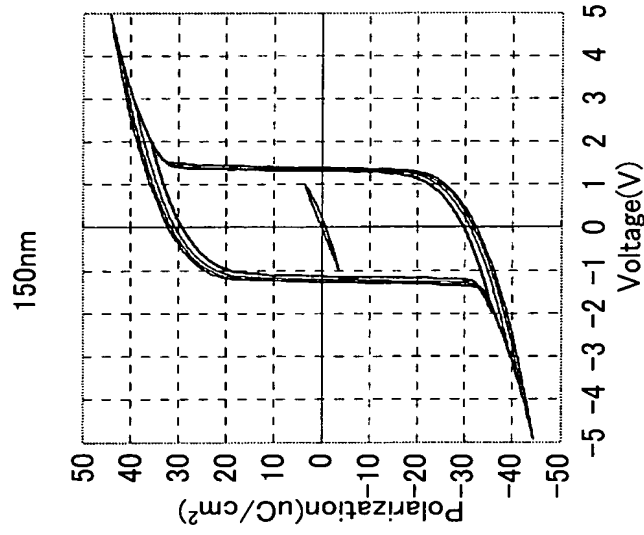


FIG. 8C

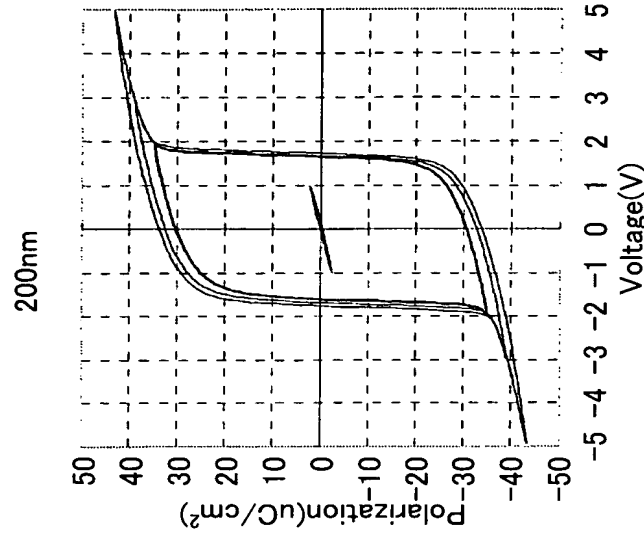


FIG. 9A

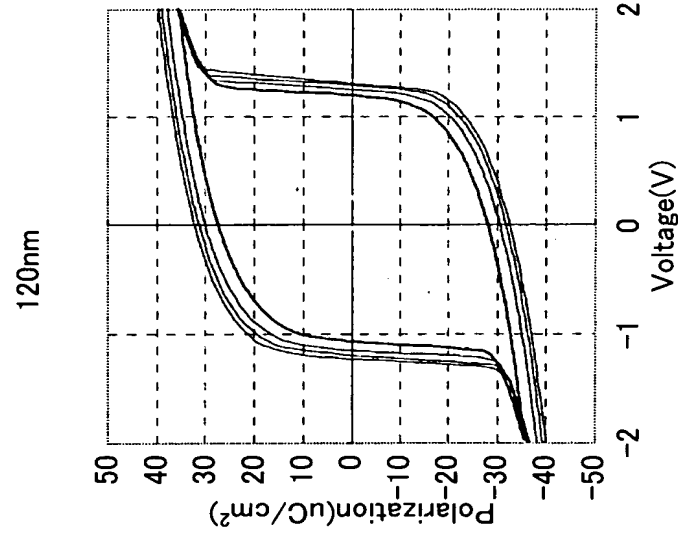


FIG. 9B

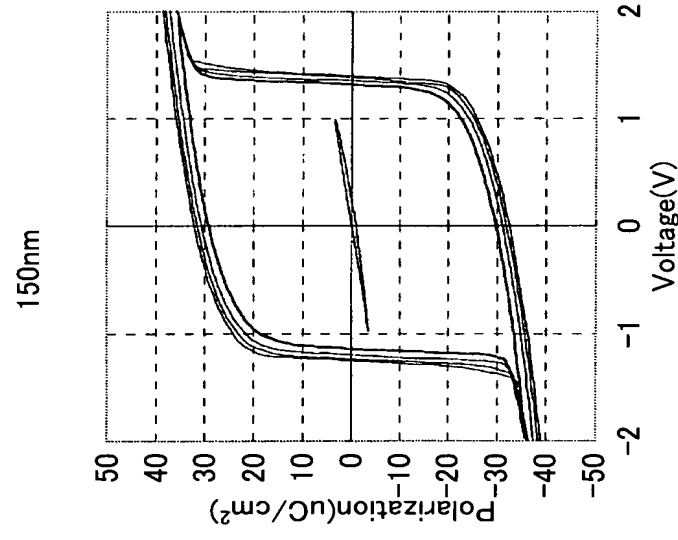


FIG. 9C

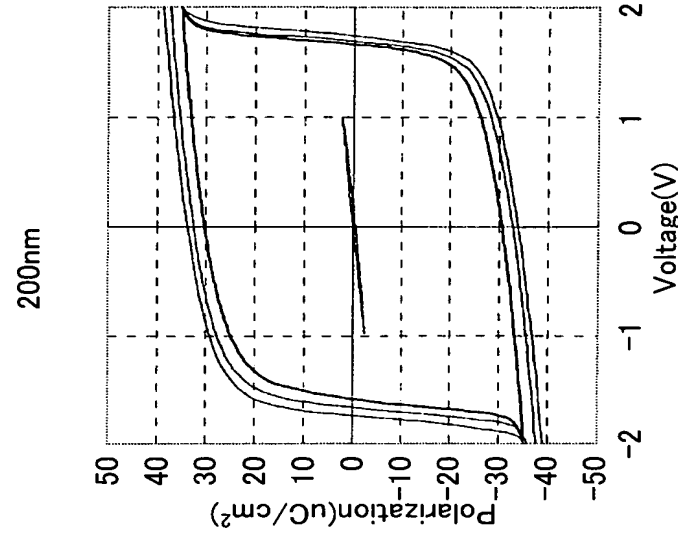


FIG. 10A

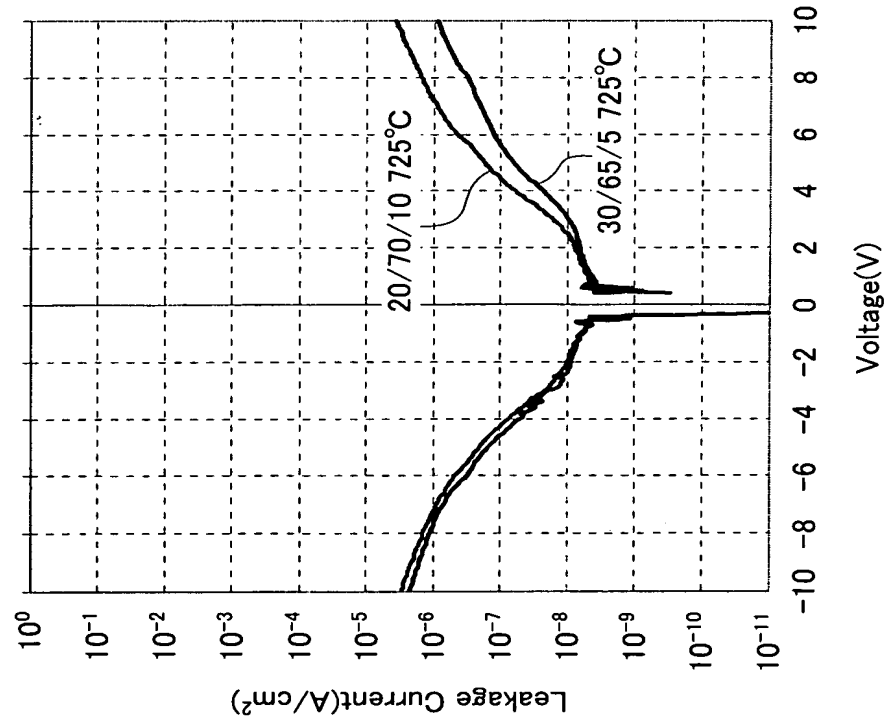


FIG. 10B

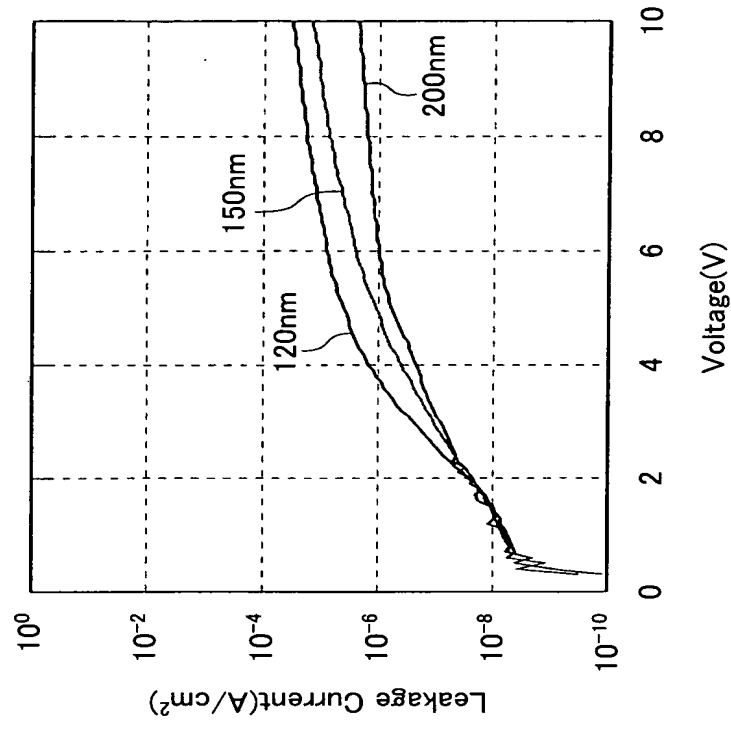


FIG. 11A

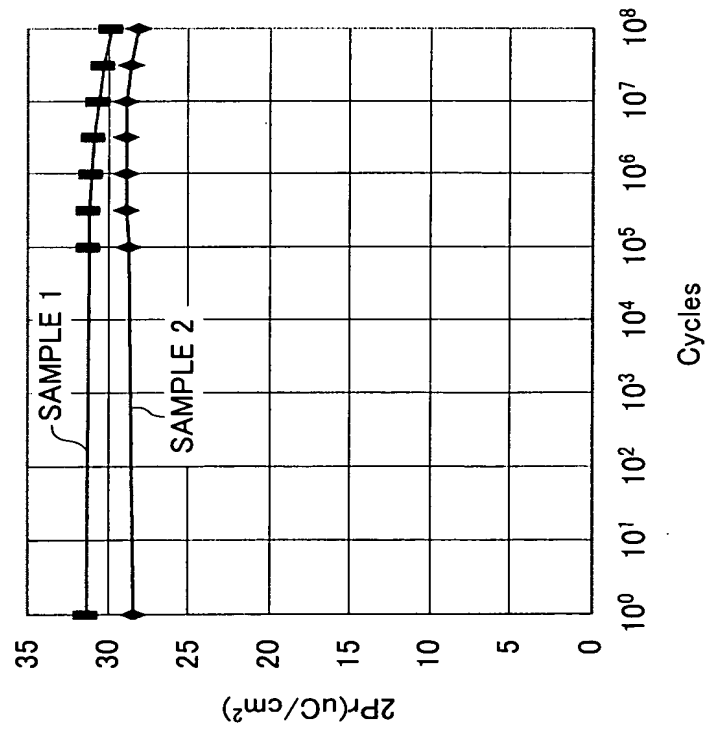


FIG. 11B

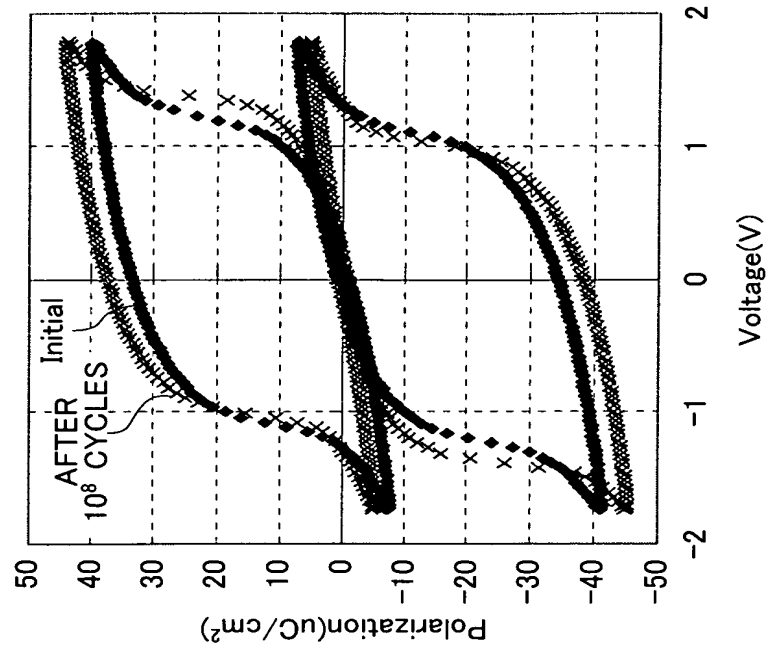


FIG. 12

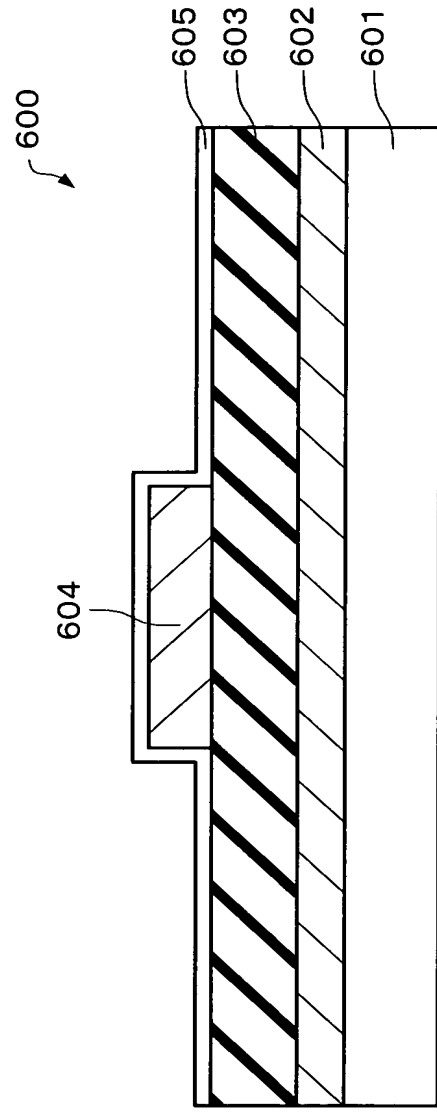


FIG. 13

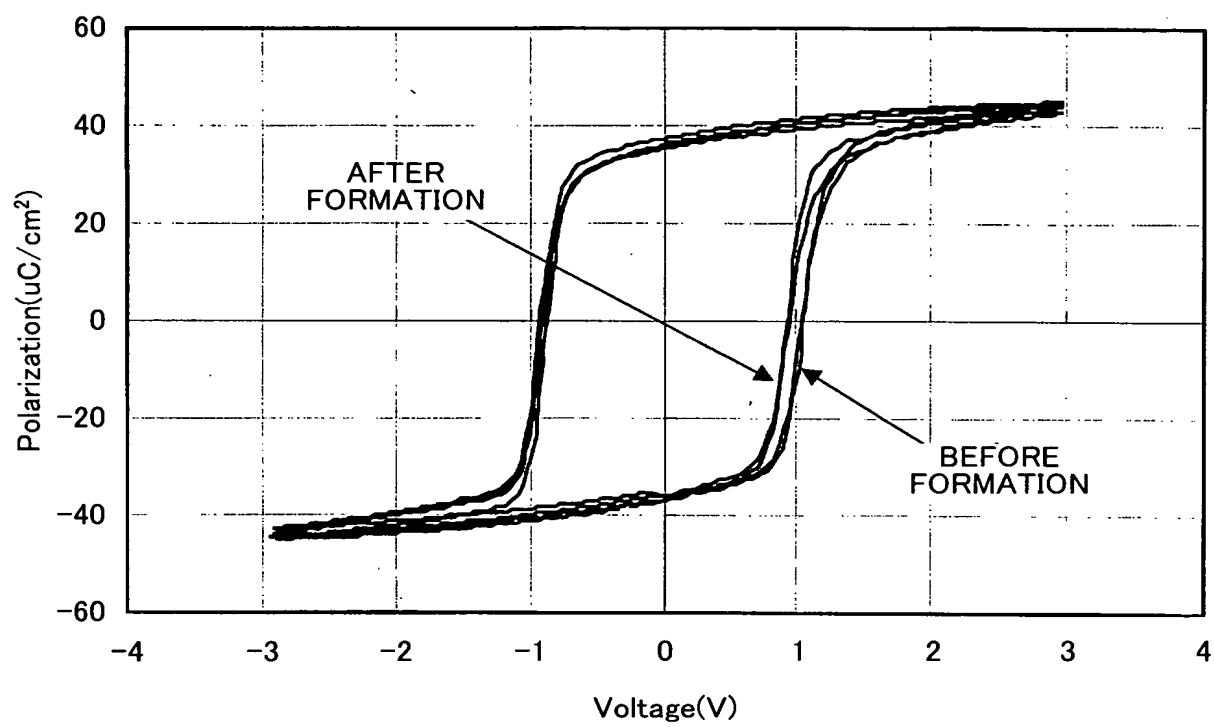


FIG. 14

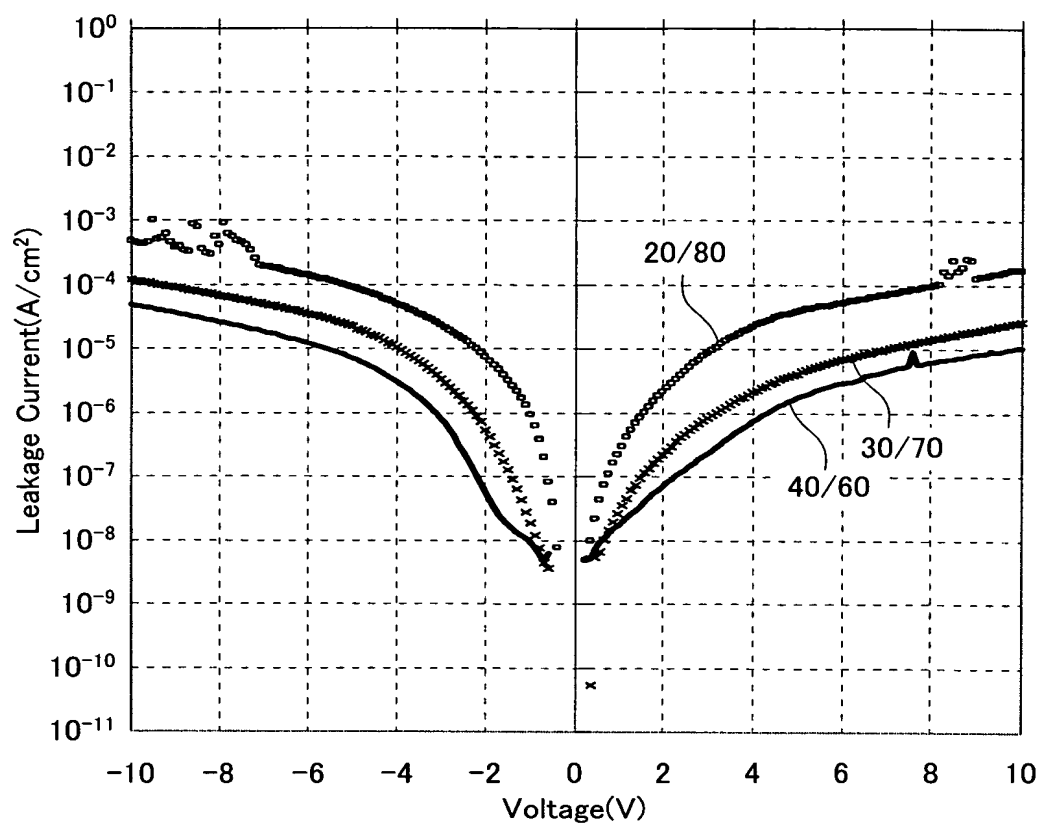


FIG. 15

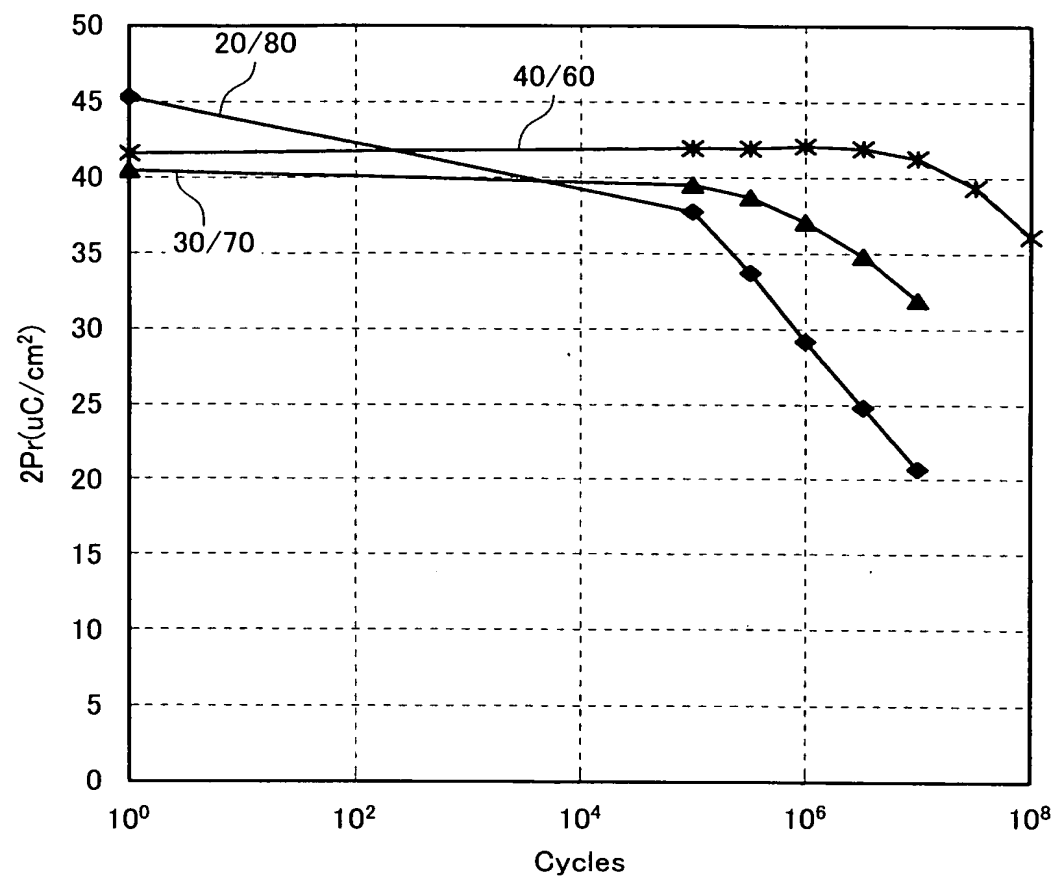


FIG. 16

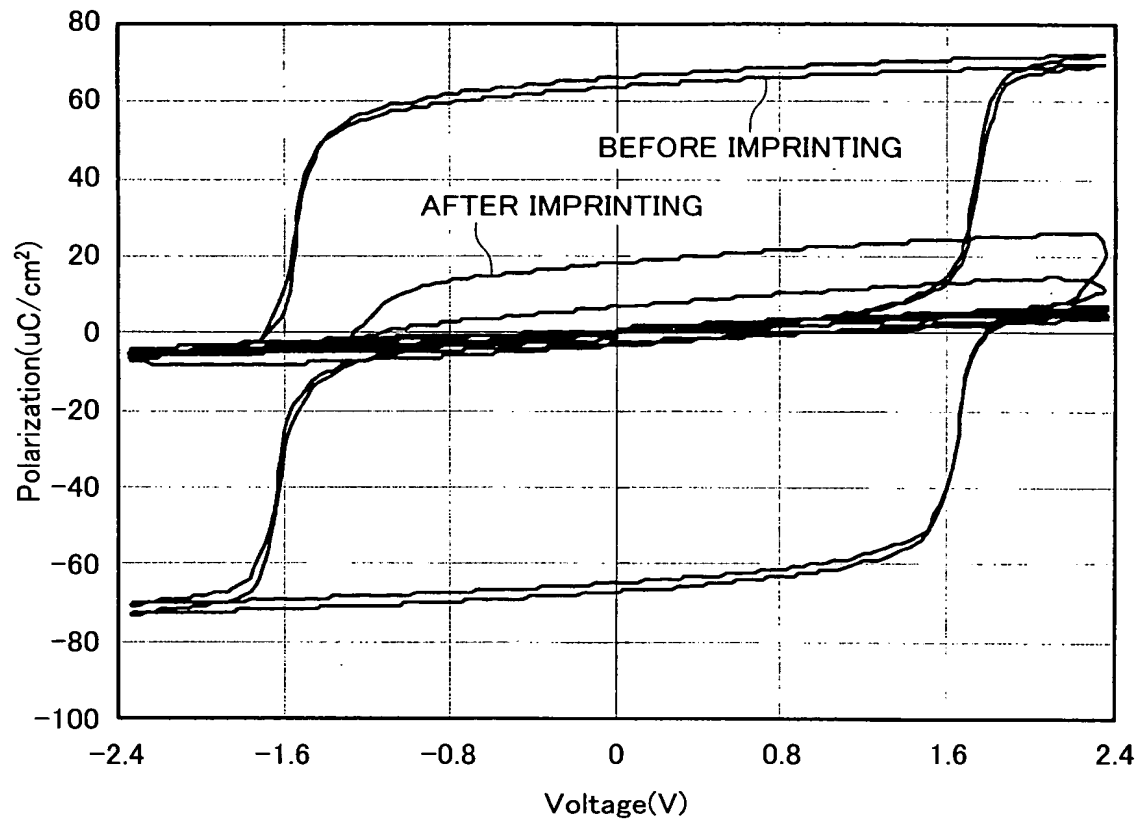


FIG. 17A

Nb=0 [mol%]

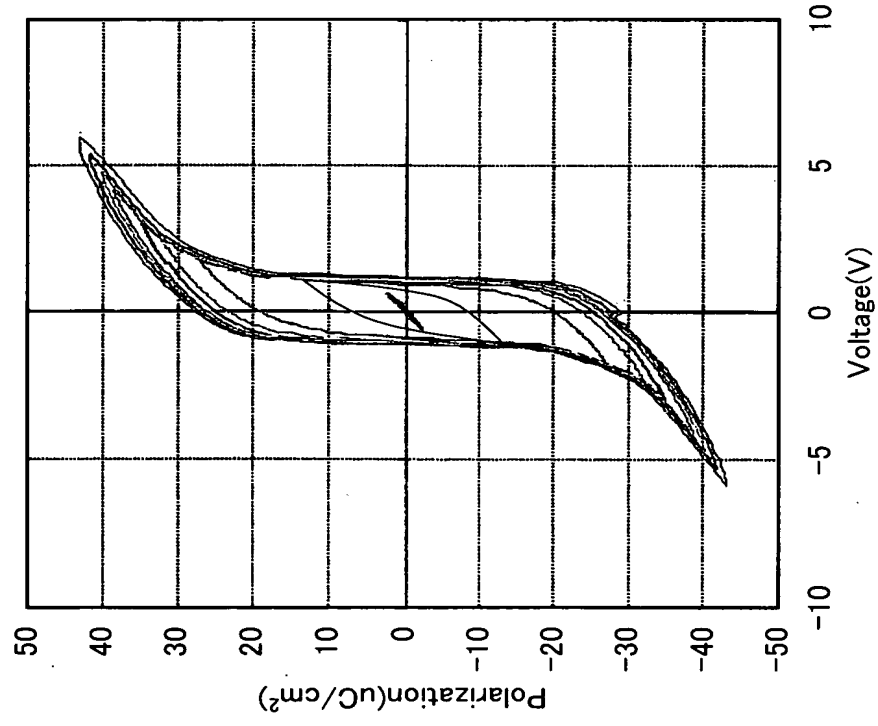


FIG. 17B

Nb=5 [mol%]

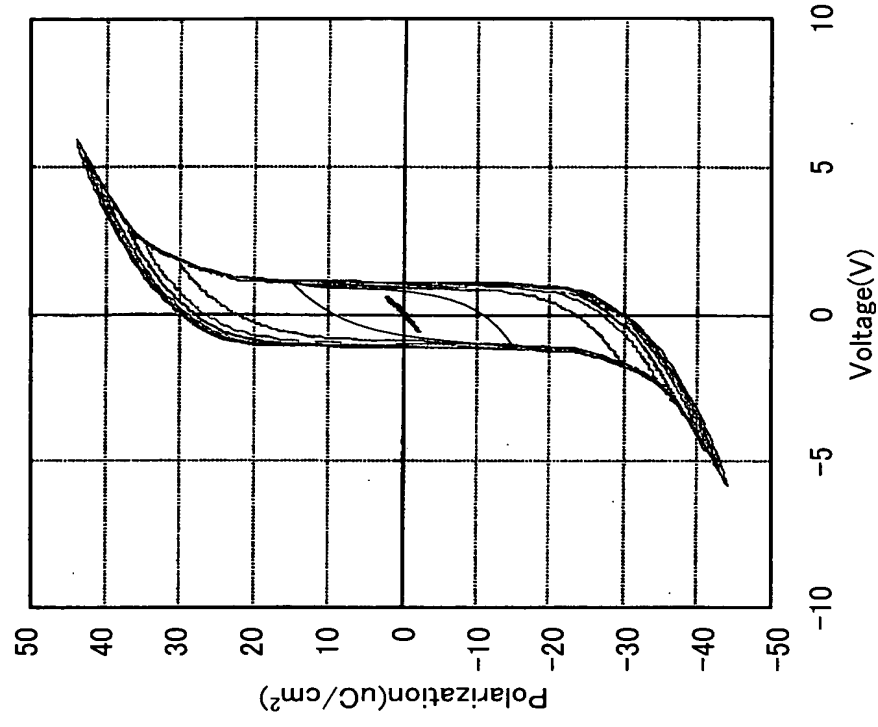


FIG. 18A

Nb=10 [mol%]

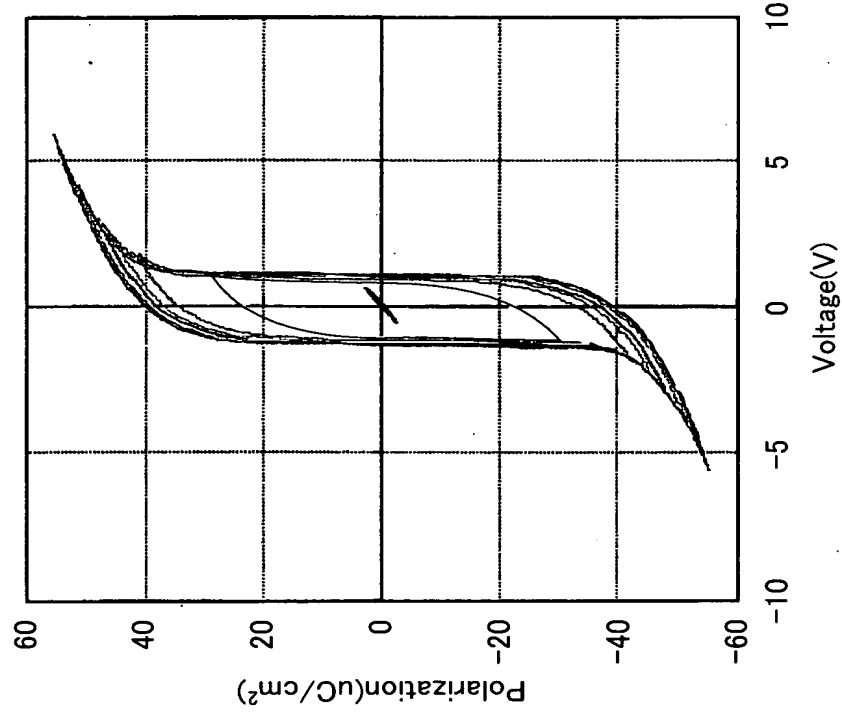


FIG. 18B

Nb=20 [mol%]

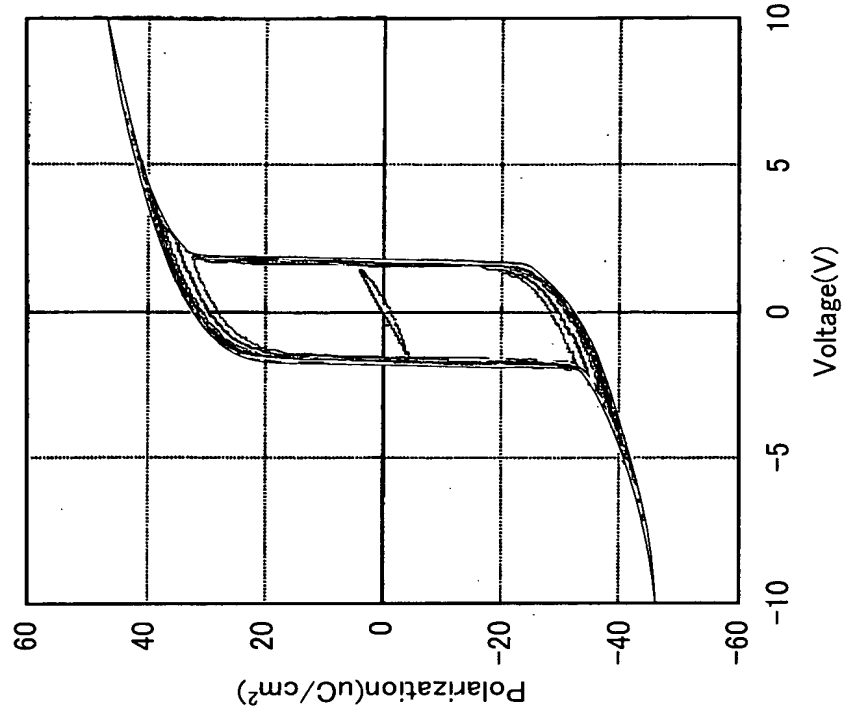


FIG. 19A

Nb=30 [mol%]

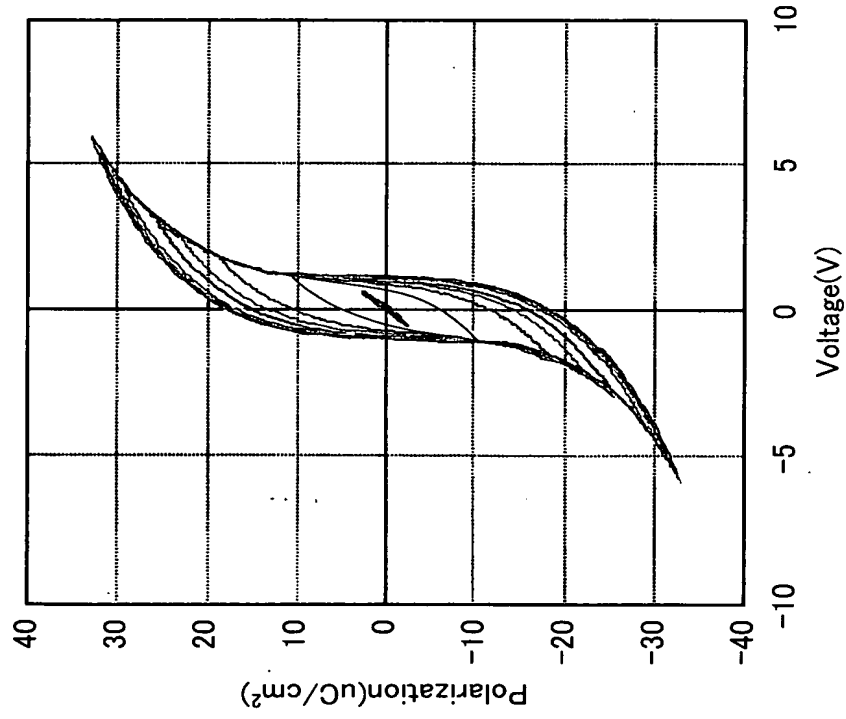


FIG. 19B

Nb=40 [mol%]

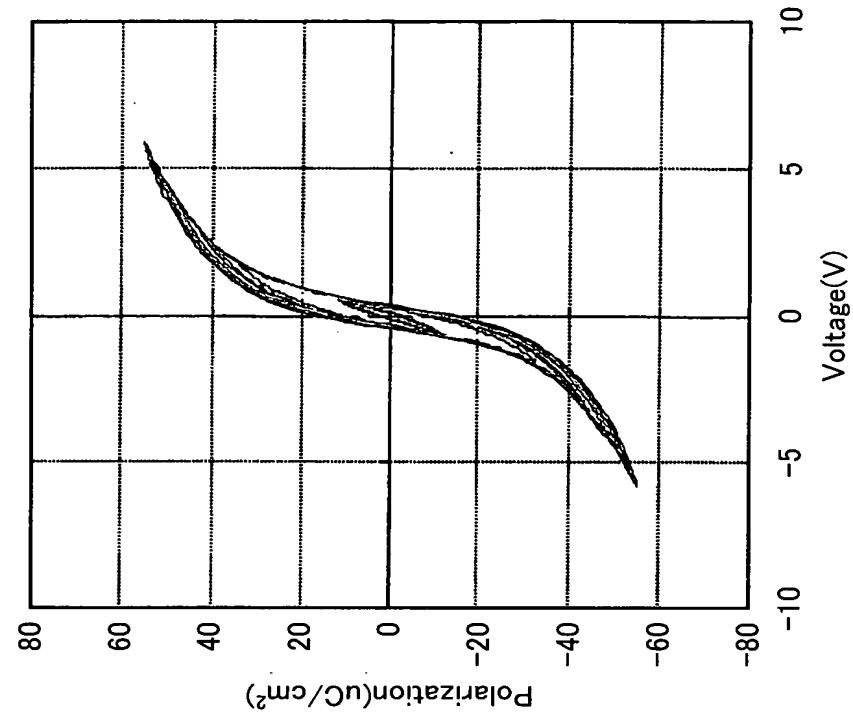


FIG. 20

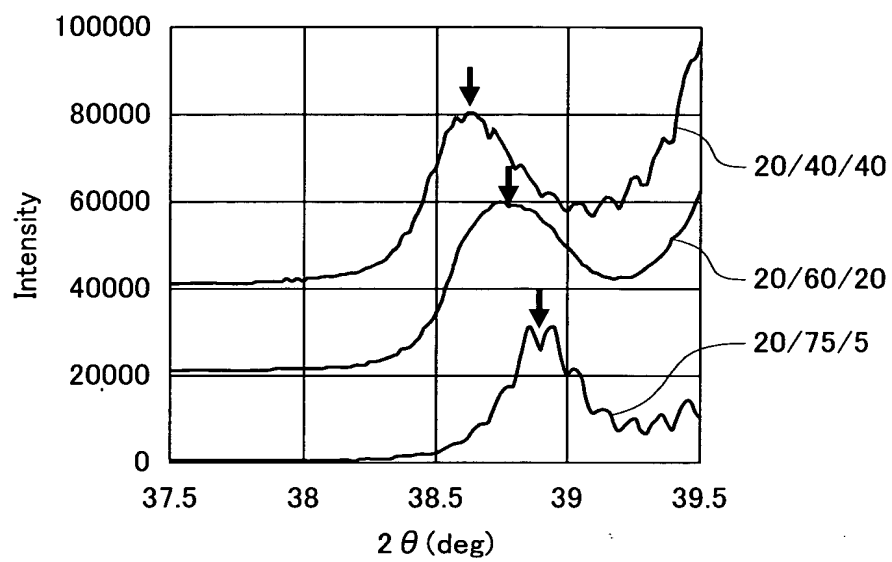


FIG. 21

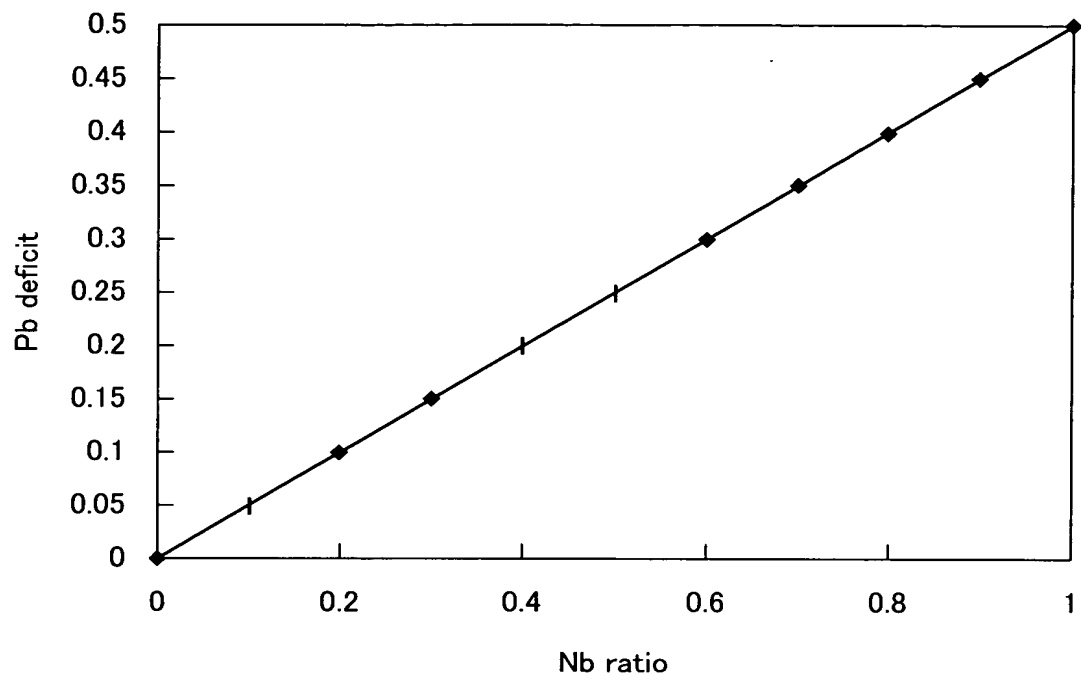


FIG. 22

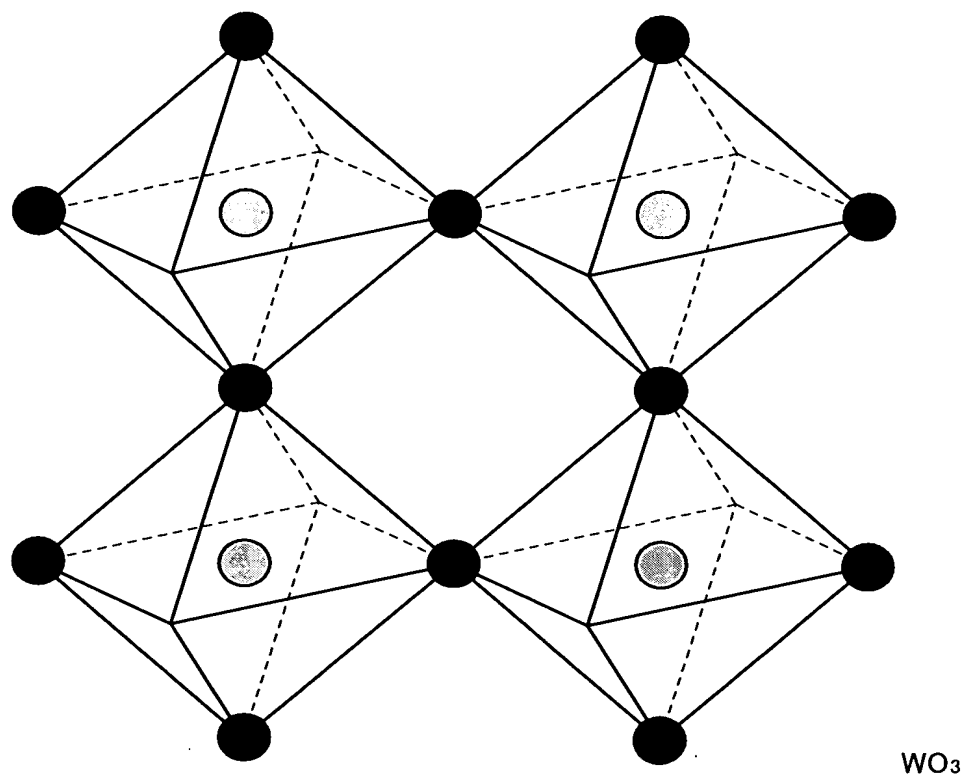


FIG. 23A

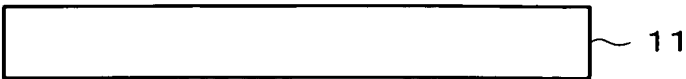


FIG. 23B



FIG. 23C

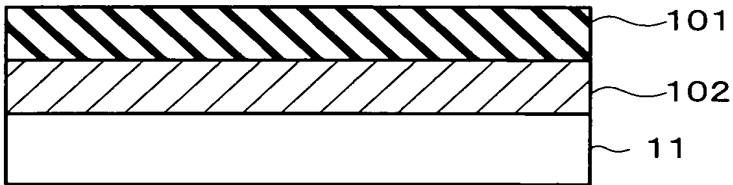


FIG. 24A

	QUANTITY OF ADDED Nb (mol%)			
	0	5	10	30
a	4.04	4.04	4.01	4.00
c	4.11	4.11	4.10	4.03
V(abc)	67.0818	67.0818	65.9284	64.8000
V/V ₀	100.0	100.0	98.3	96.1

FIG. 24B

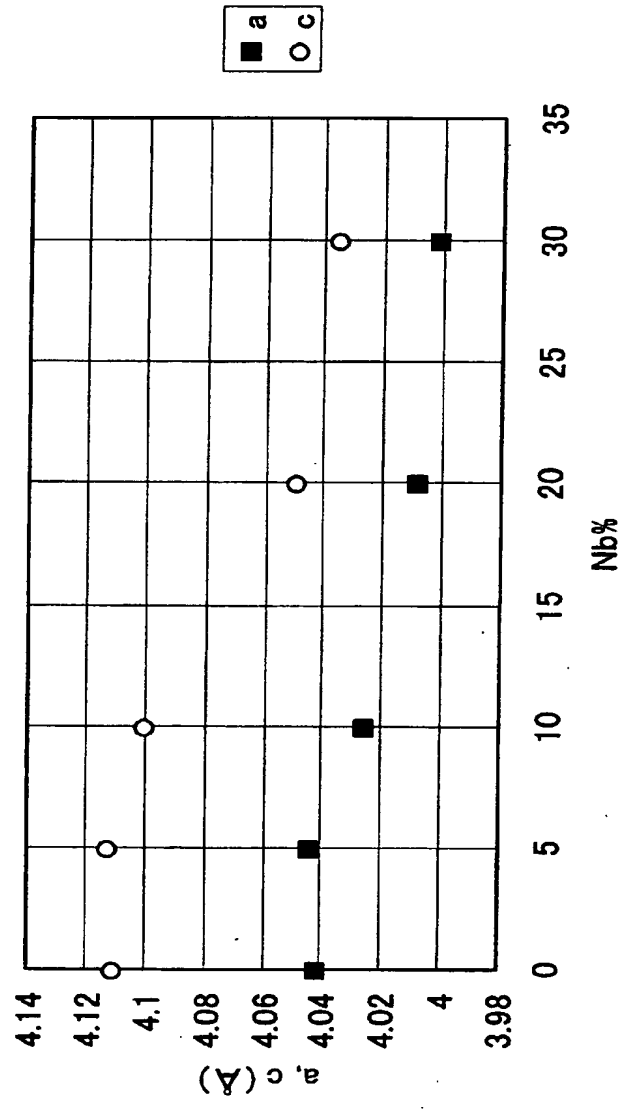


FIG. 25

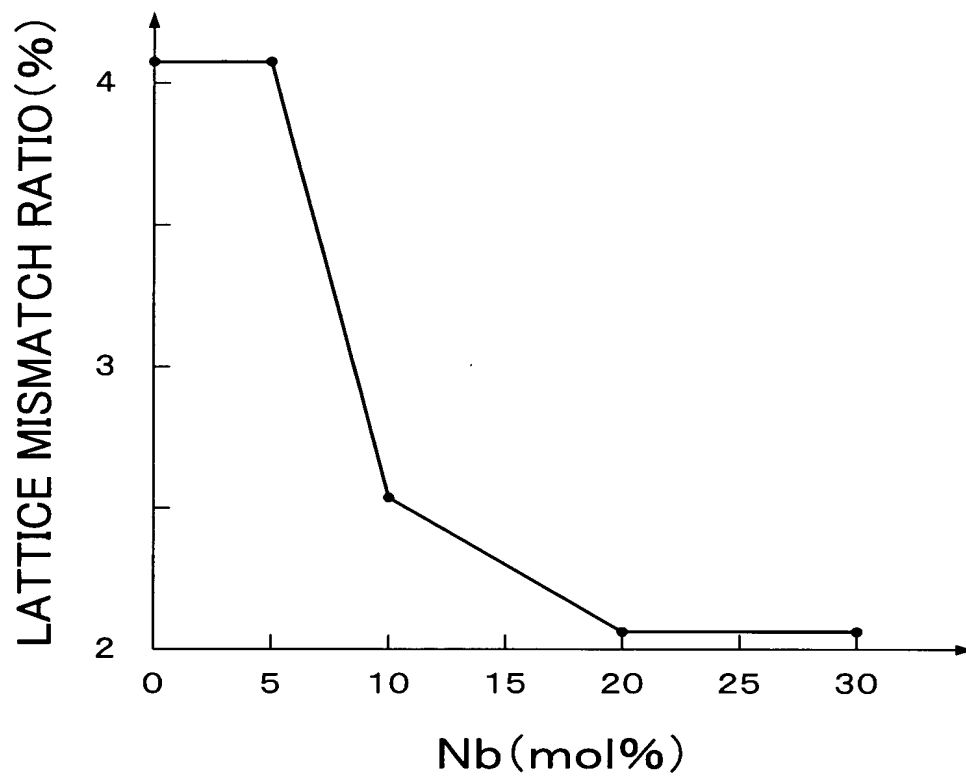


FIG. 26

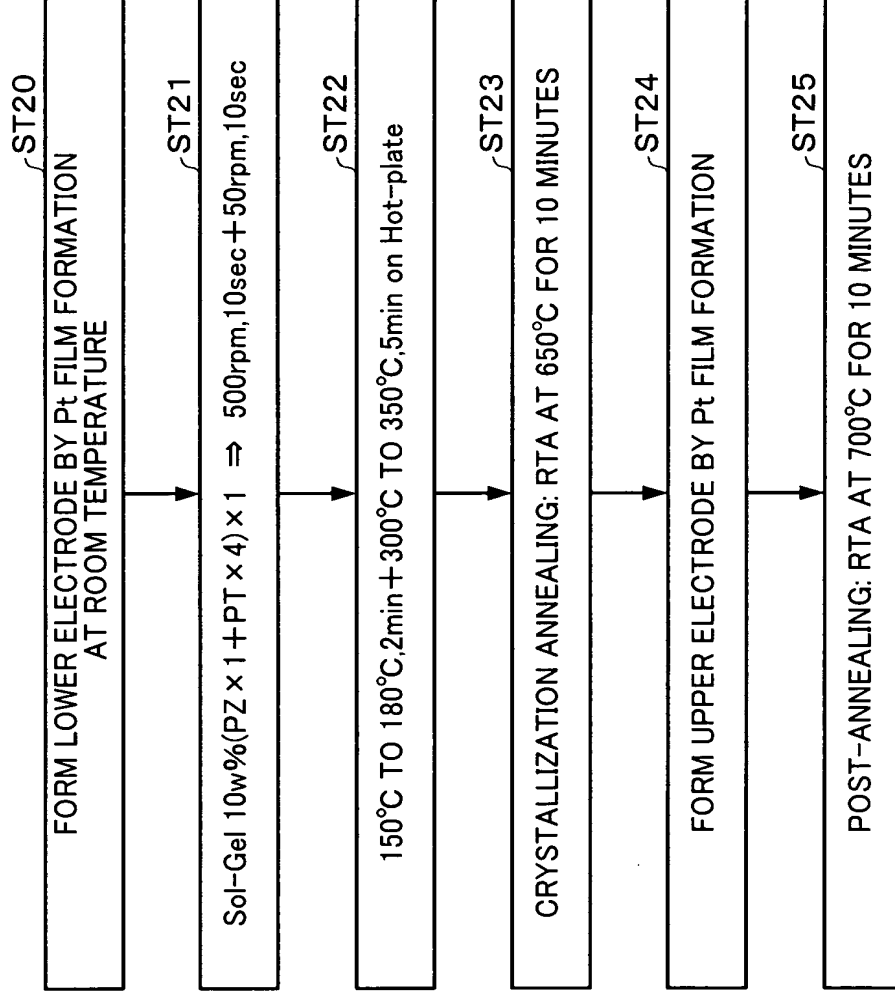


FIG. 27A

FIG. 27B

FIG. 27C

FIG. 27D

FIG. 27E

Stoichiometry

5% excess

10% excess

15% excess

20% excess

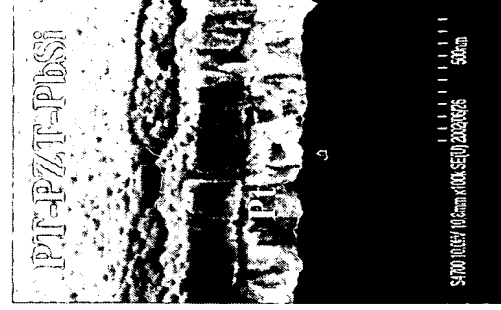
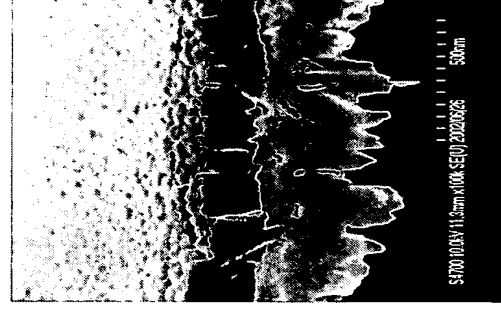
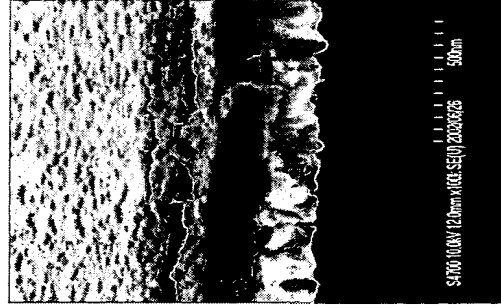
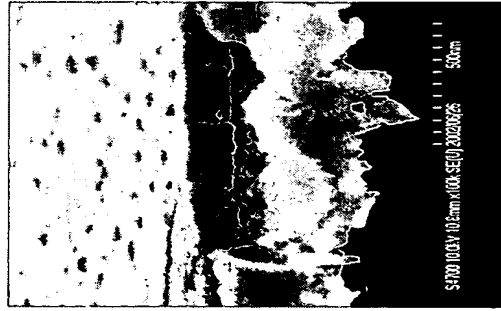


FIG. 28A

FIG. 28B

FIG. 28C

FIG. 28D

FIG. 28E

Stoichiometry

5% excess

10% excess

15% excess

20% excess

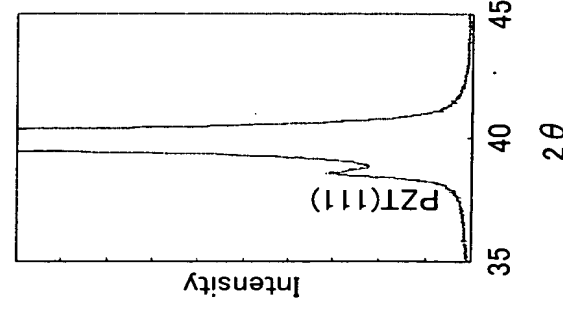
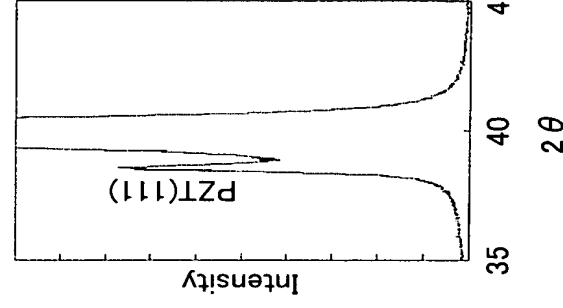
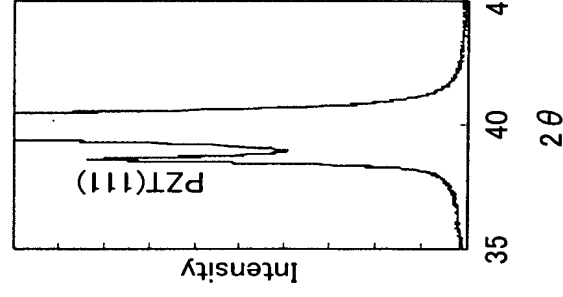
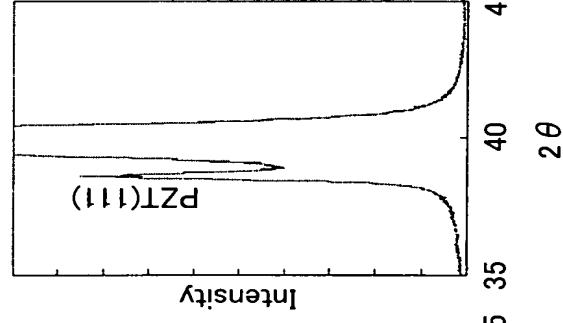
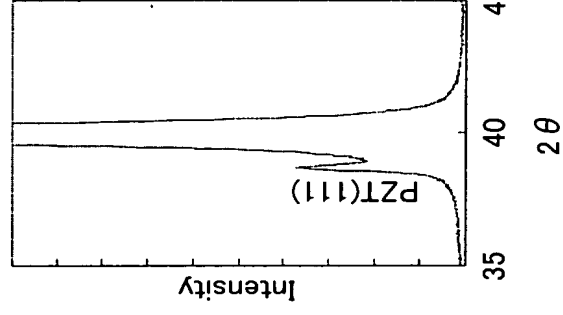


FIG. 29A

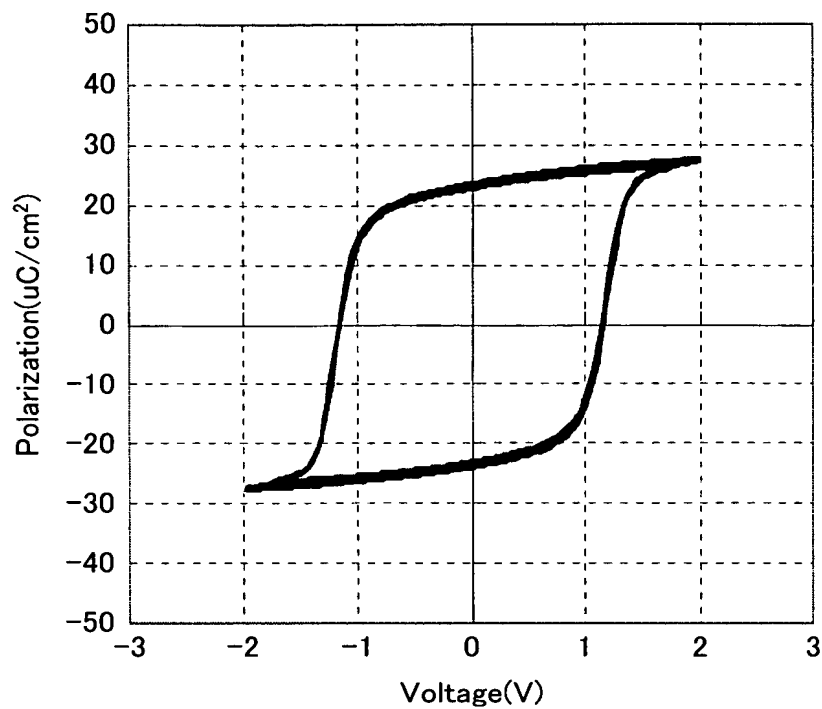


FIG. 29B

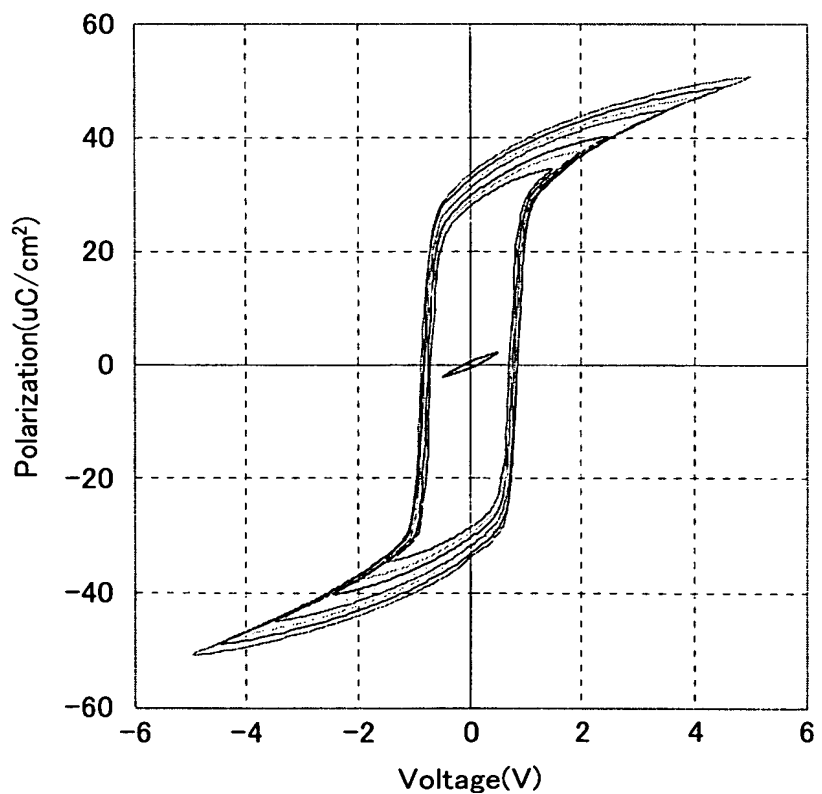


FIG. 30

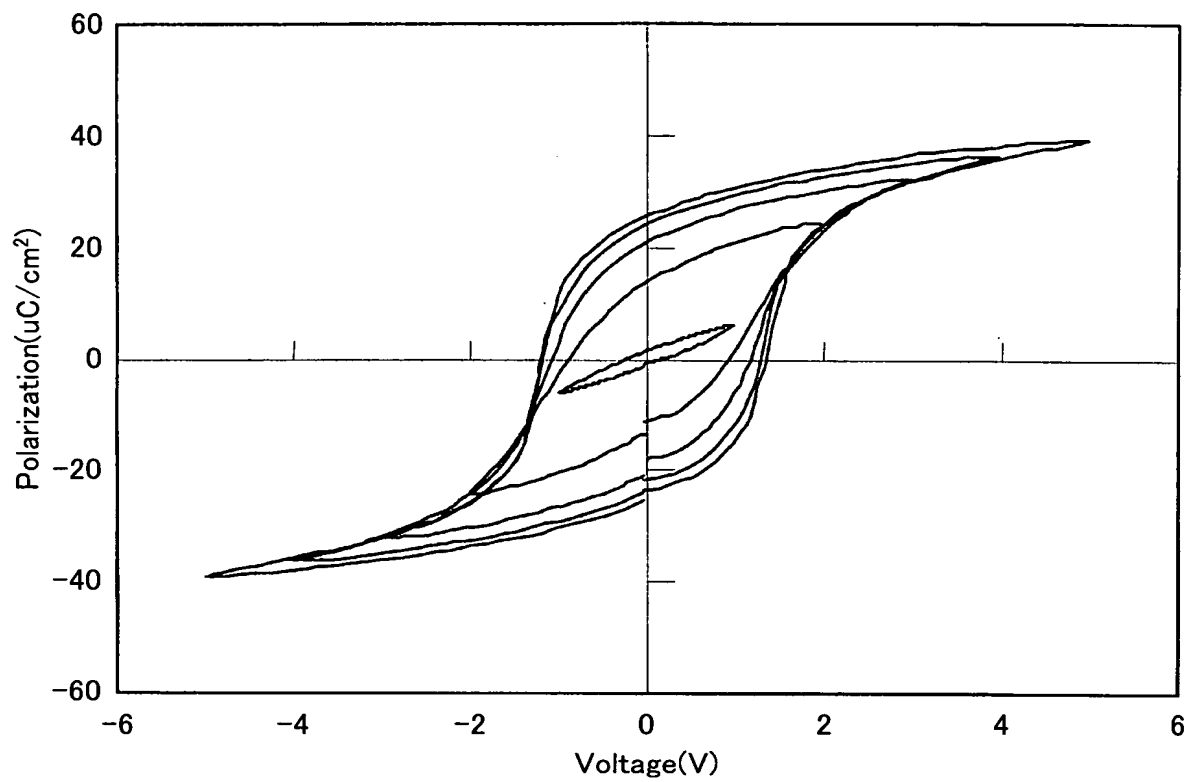


FIG. 31A

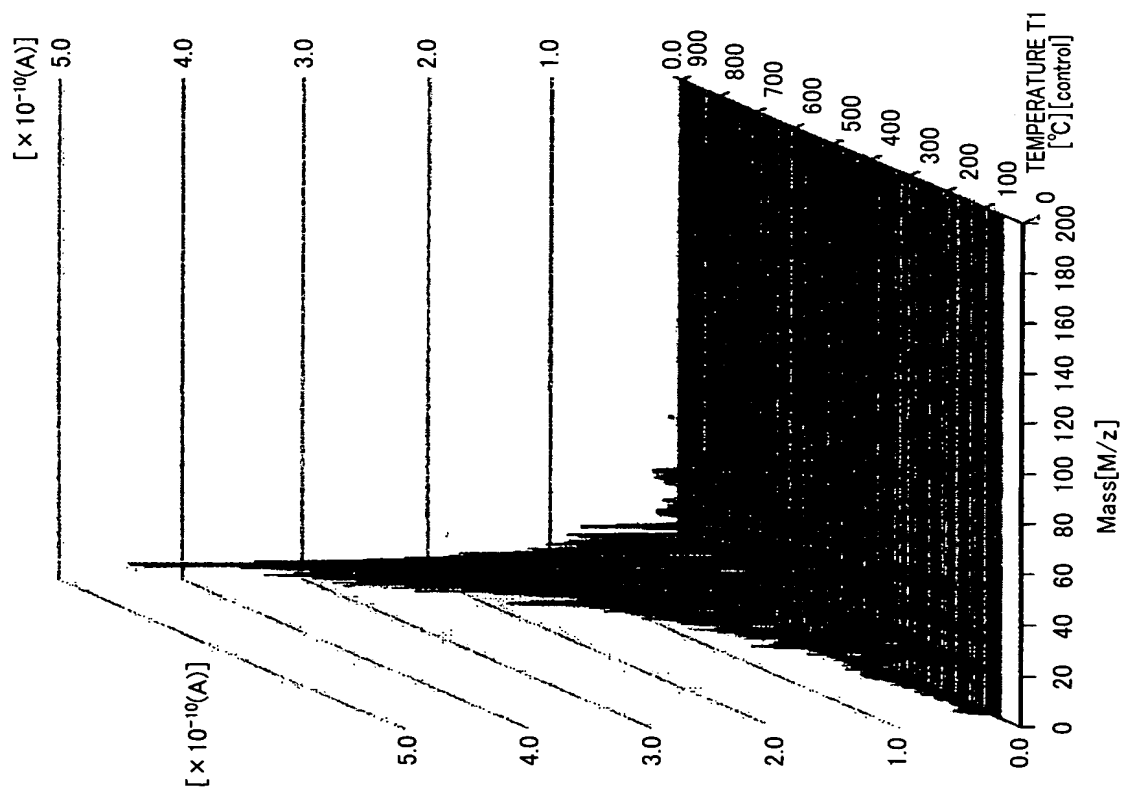


FIG. 31B

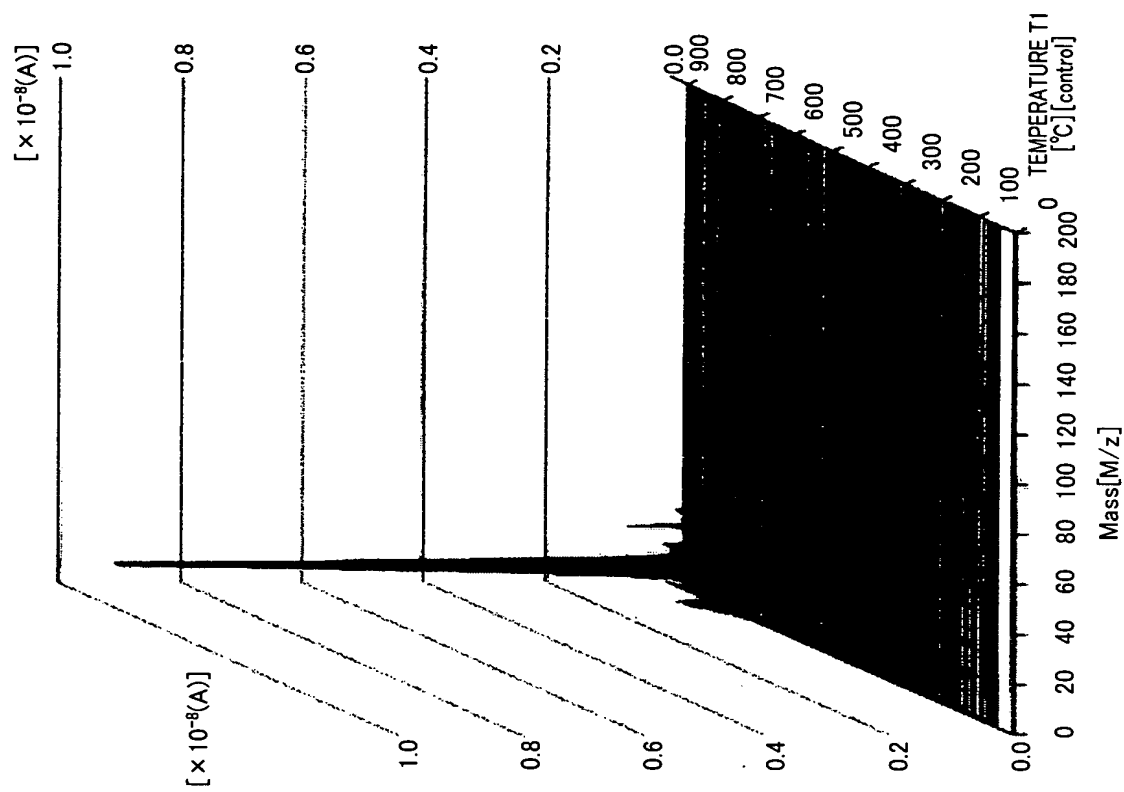


FIG. 32A

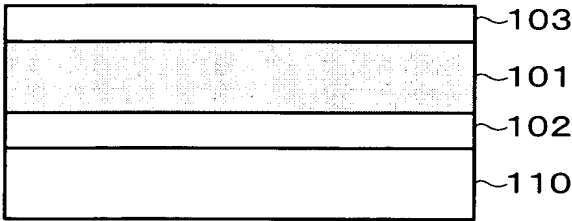


FIG. 32B

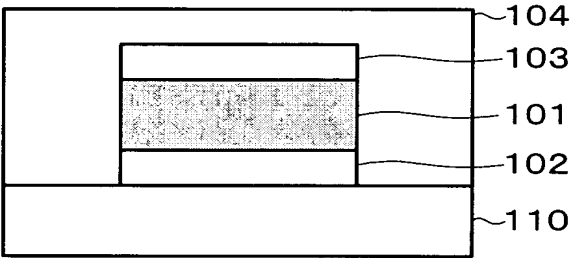


FIG. 32C

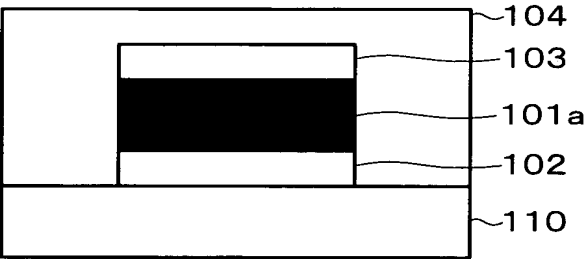


FIG. 33A

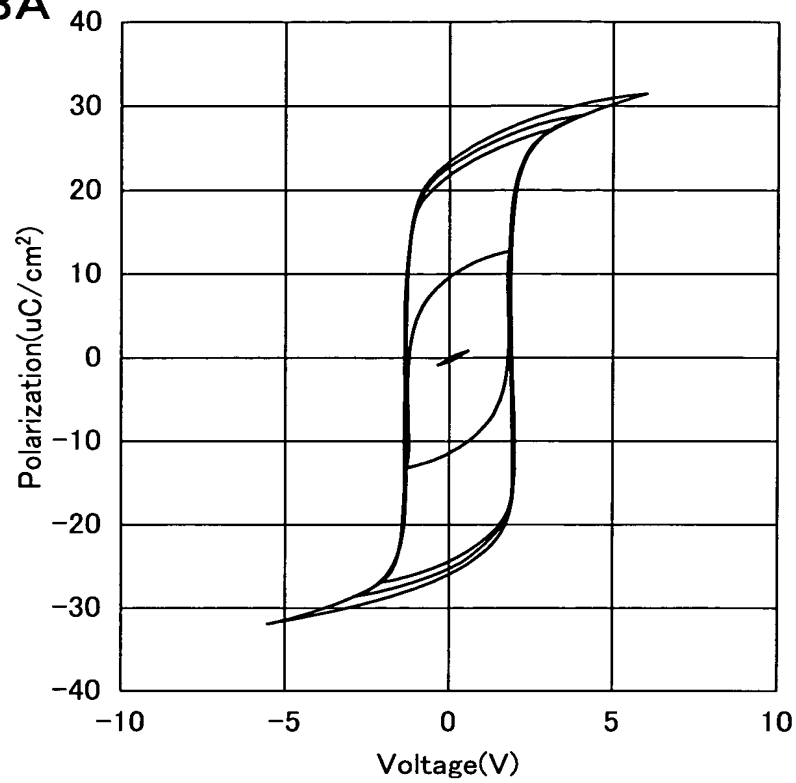


FIG. 33B

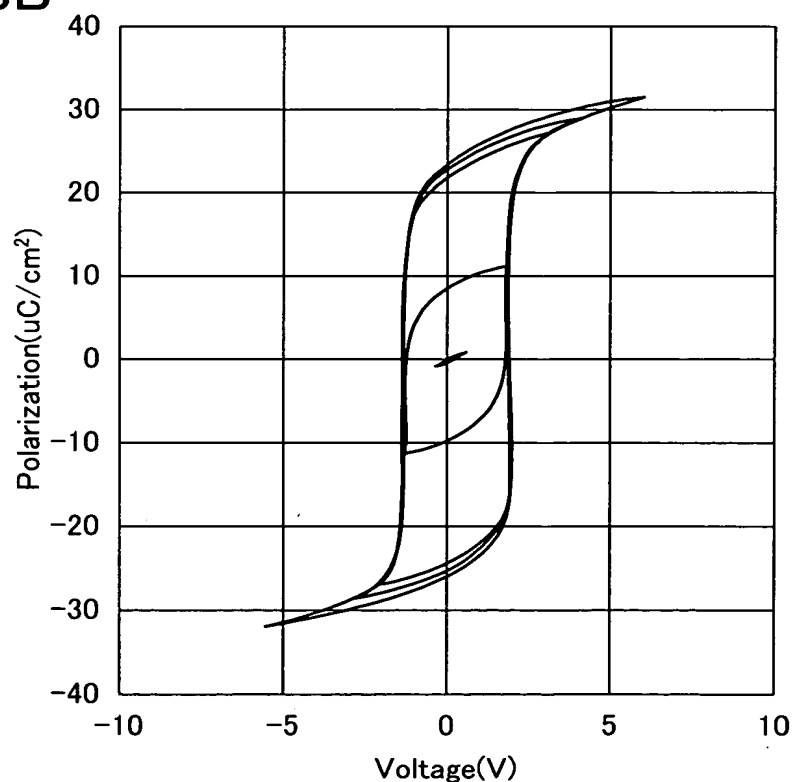


FIG. 34

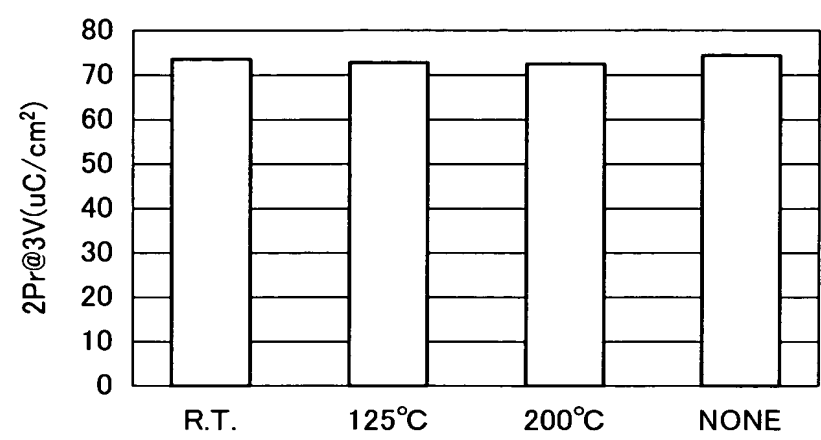


FIG. 35A

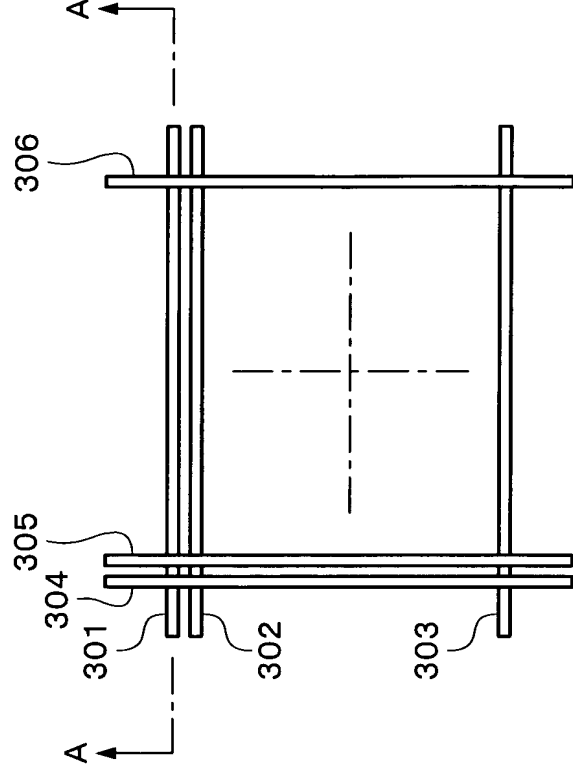


FIG. 35B

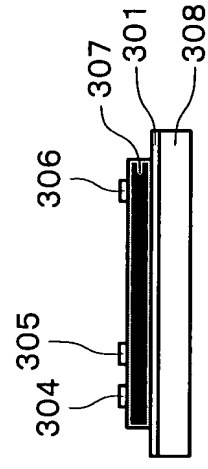


FIG. 36

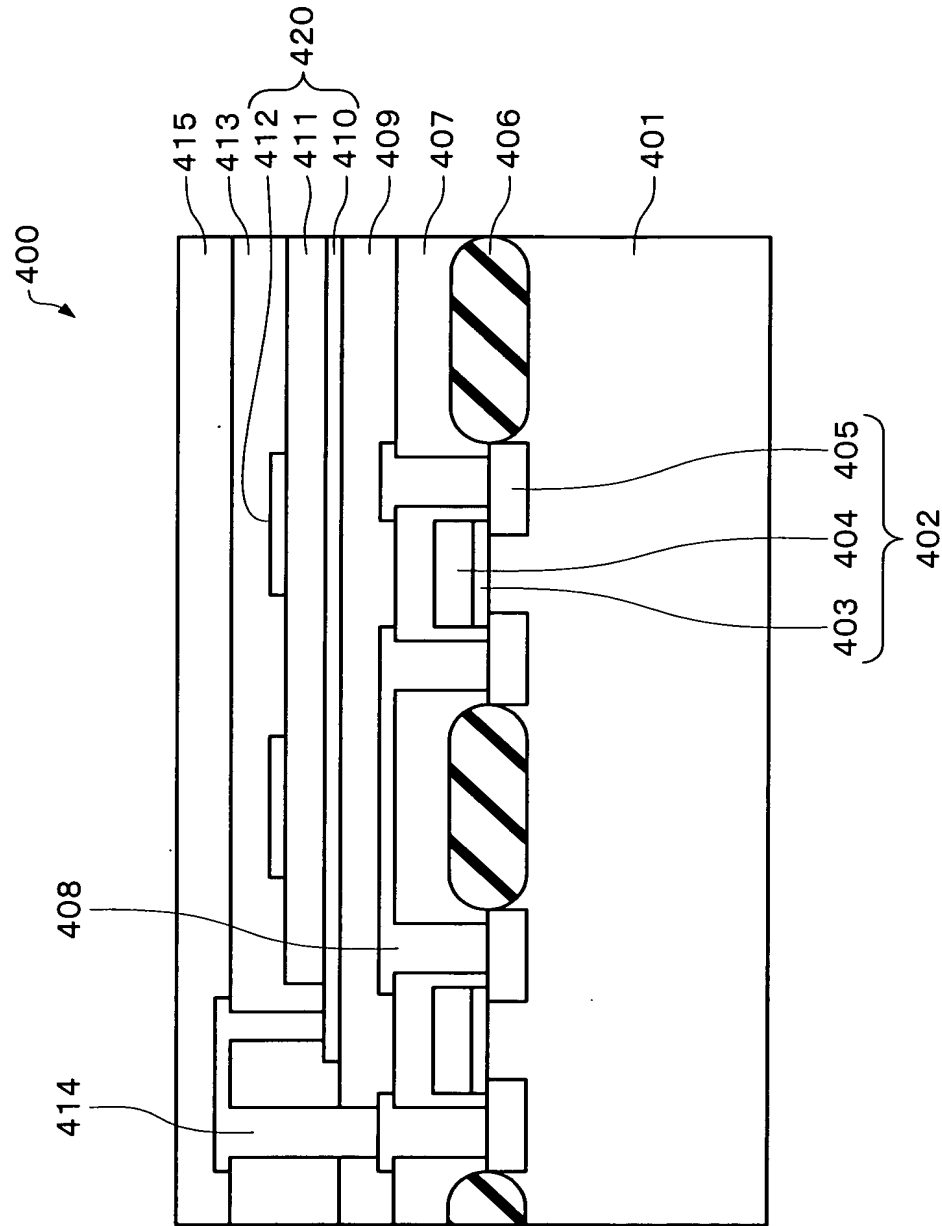


FIG. 37A

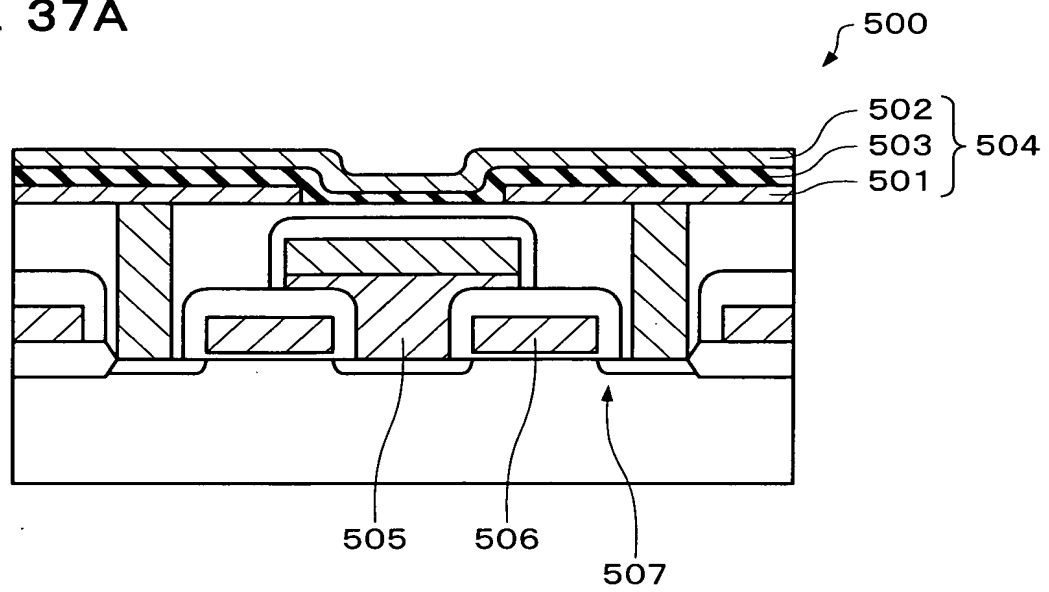


FIG. 37B

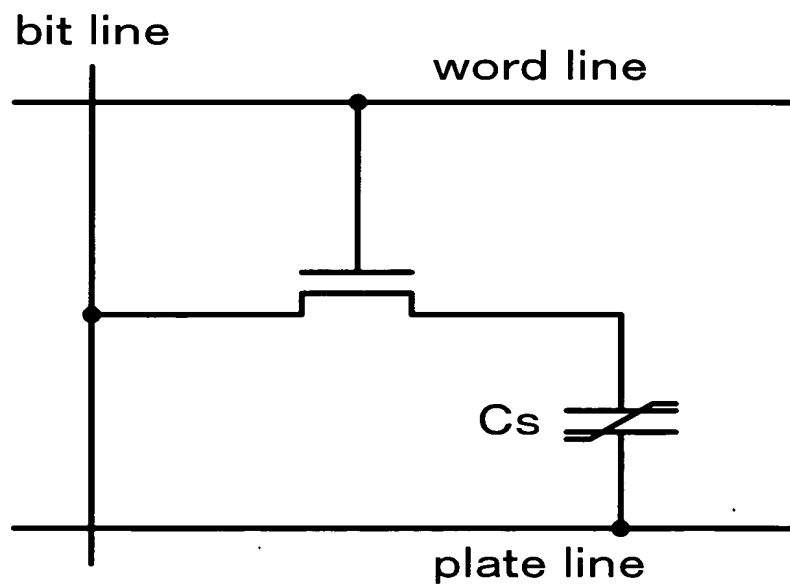


FIG. 38A

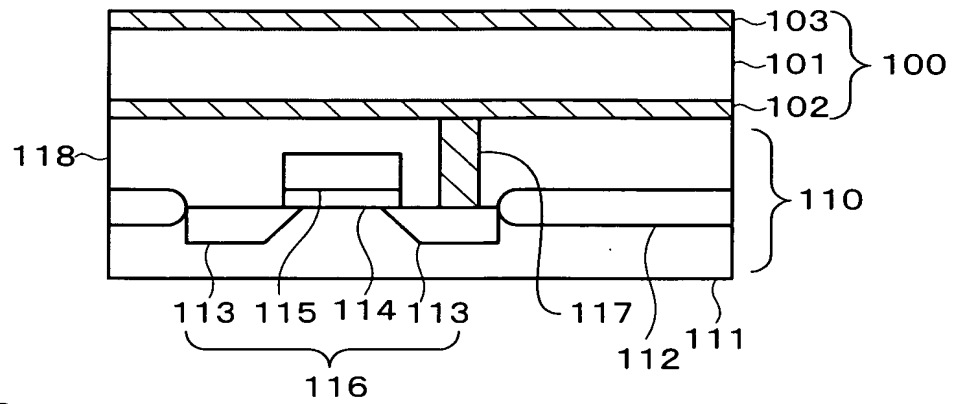


FIG. 38B

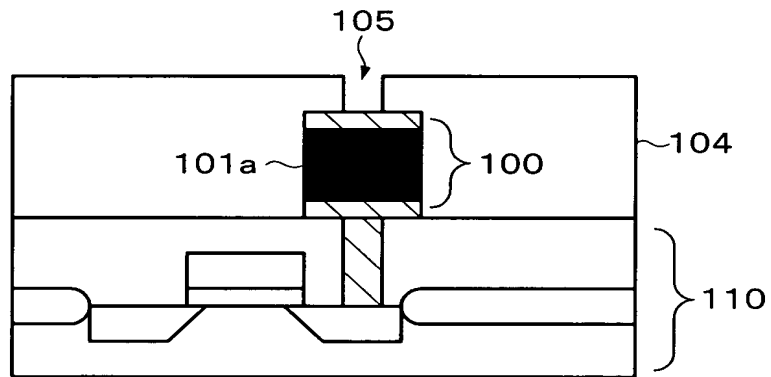


FIG. 38C

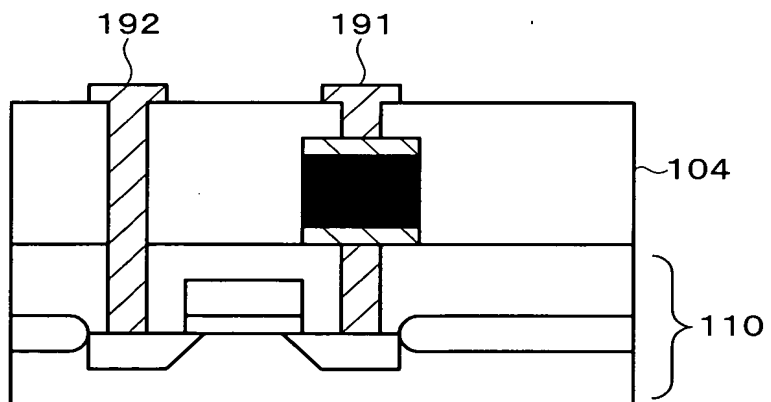


FIG. 39

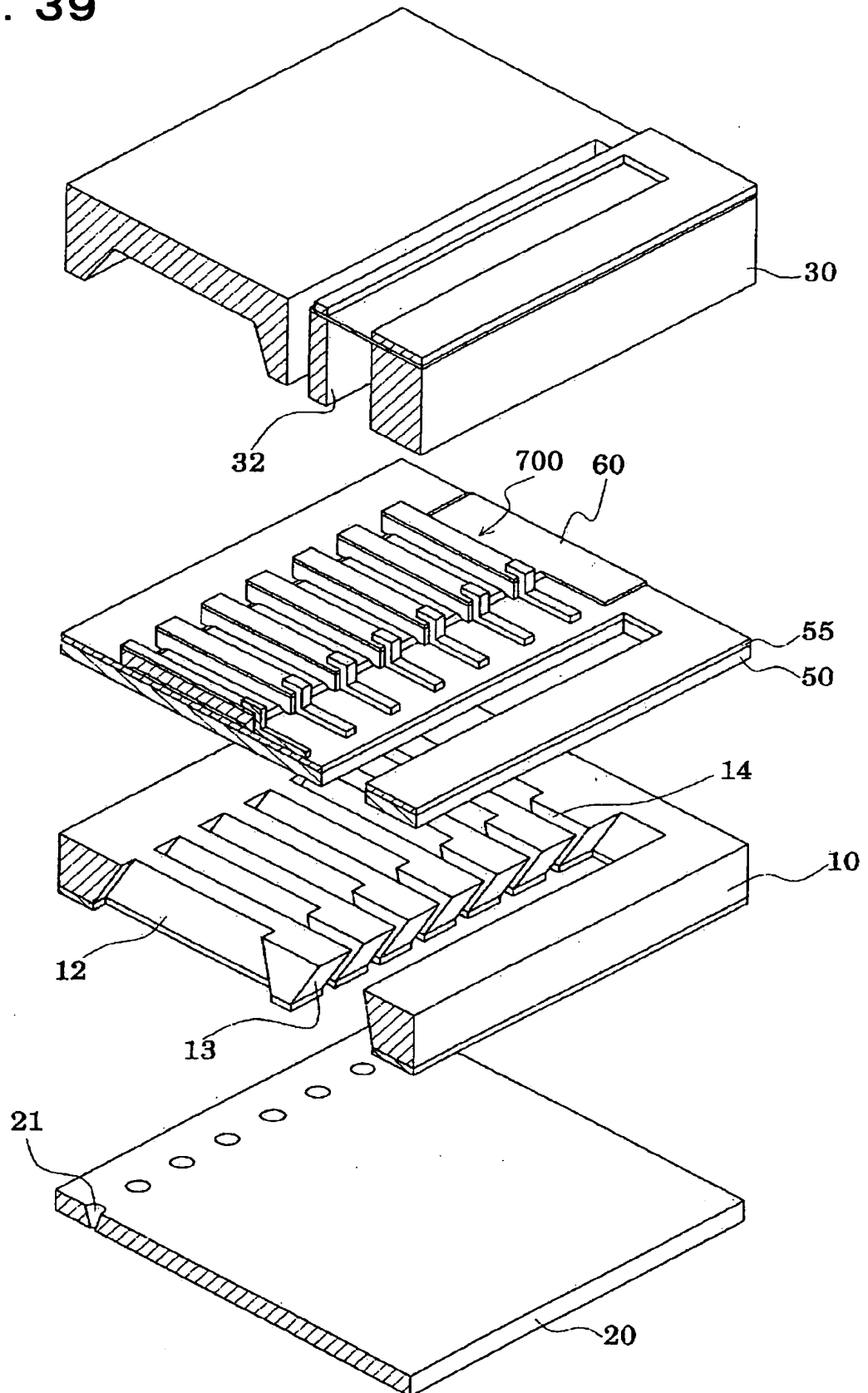


FIG. 40A

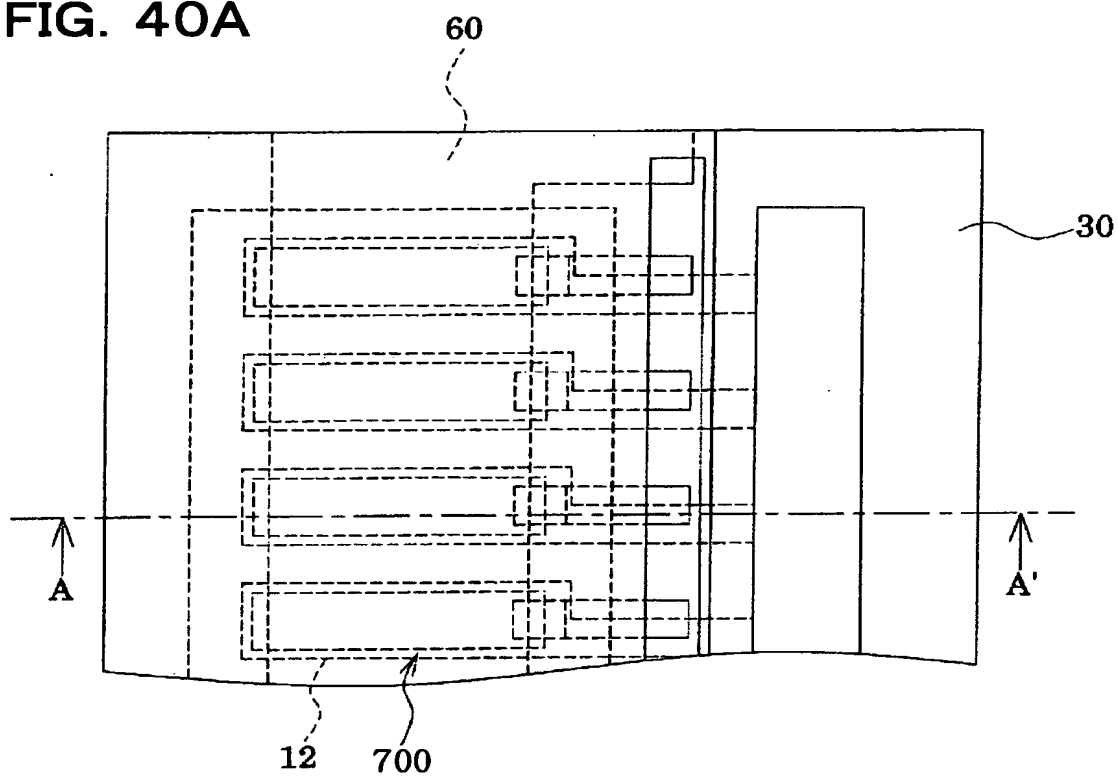


FIG. 40B

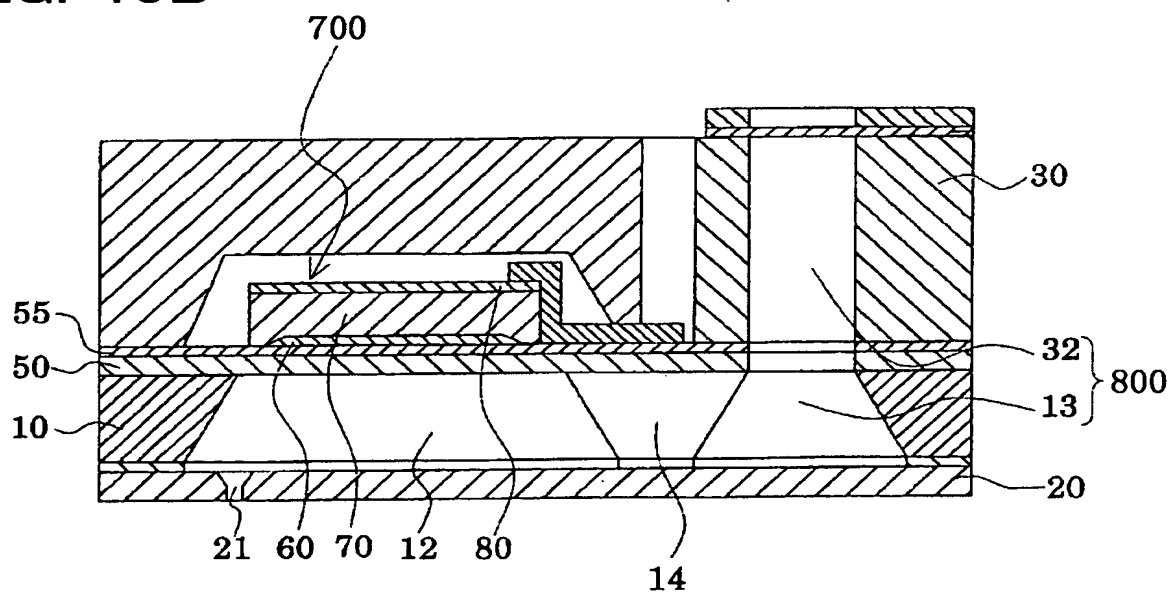


FIG. 41

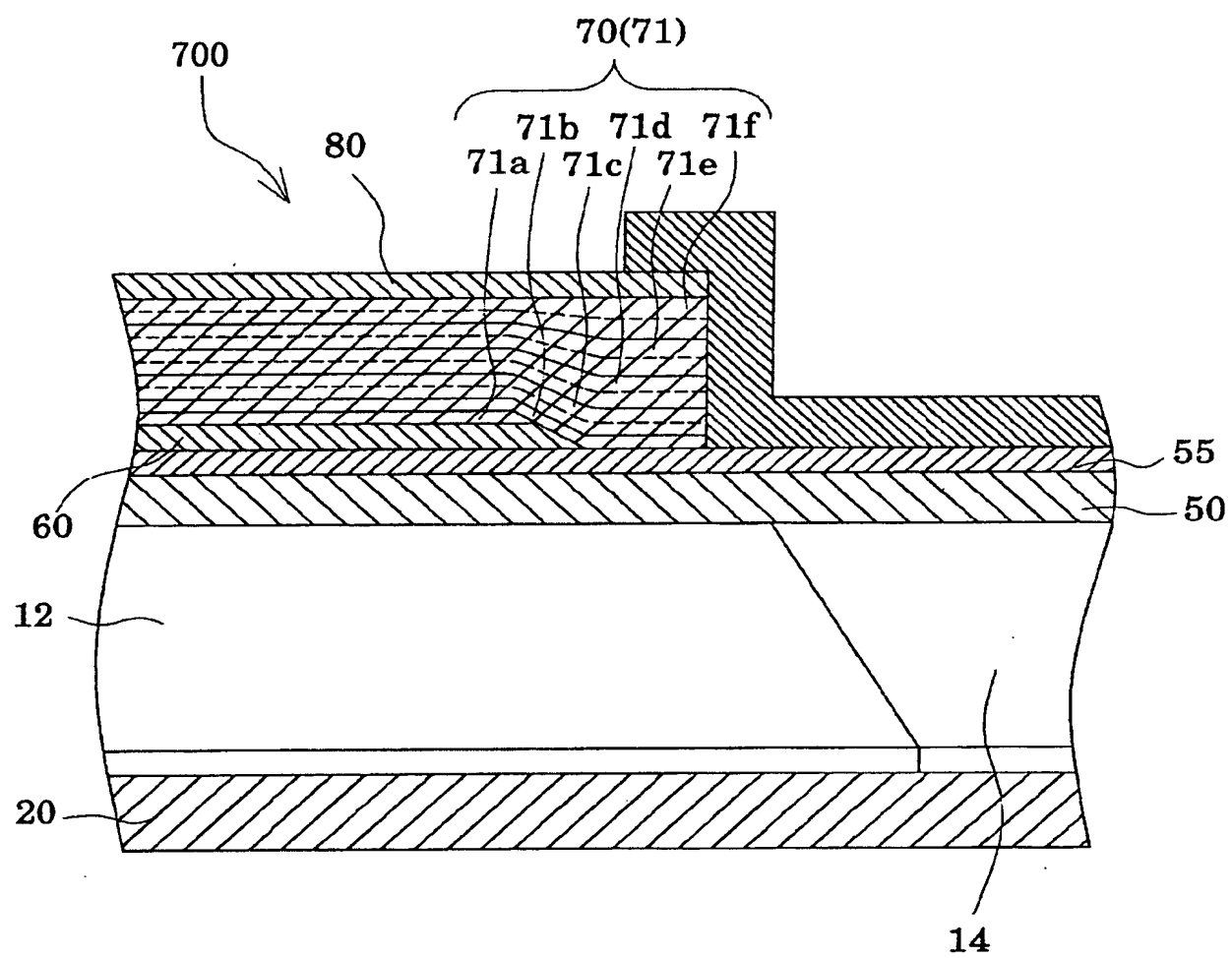


FIG. 42

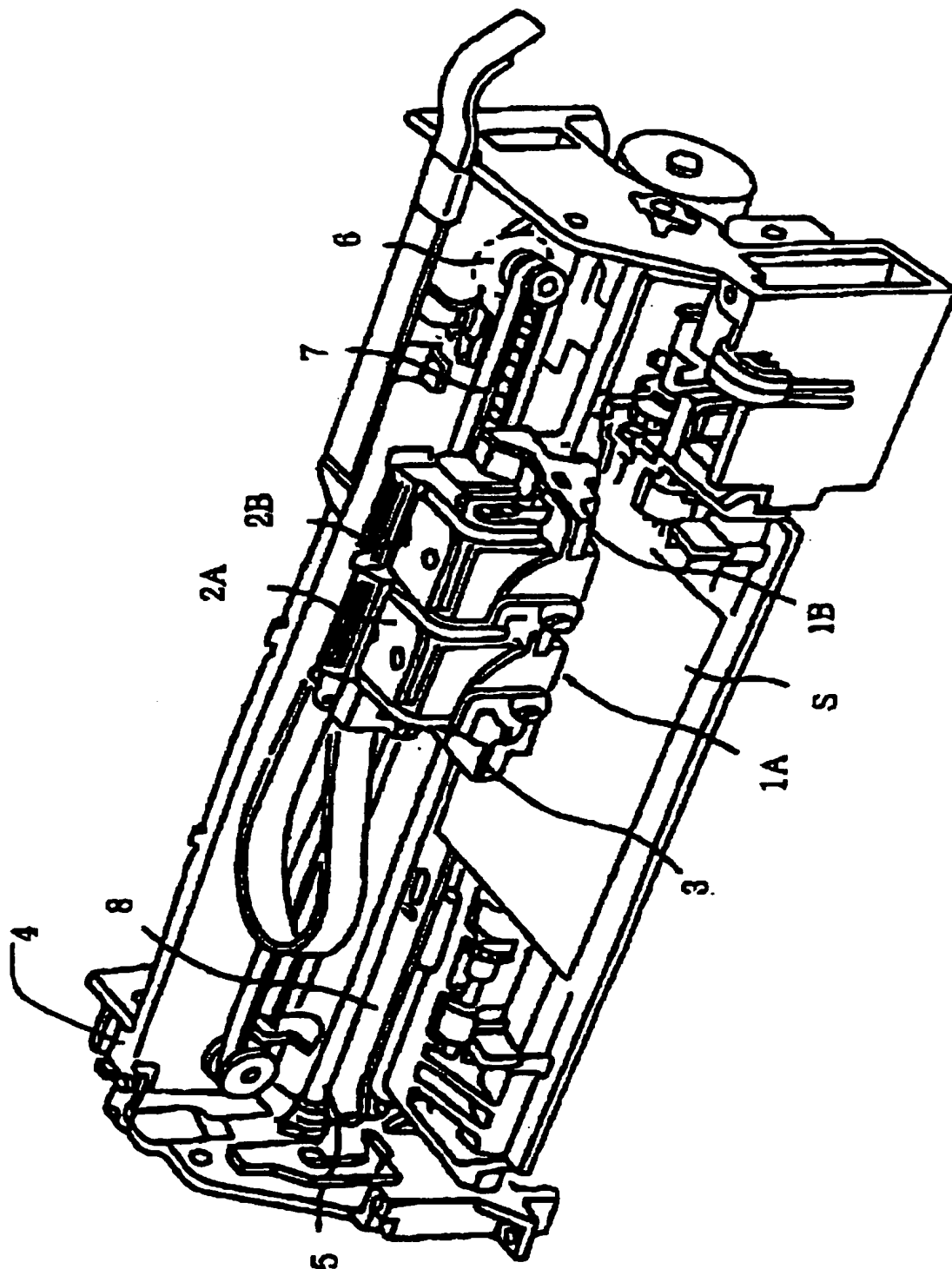


FIG. 43A

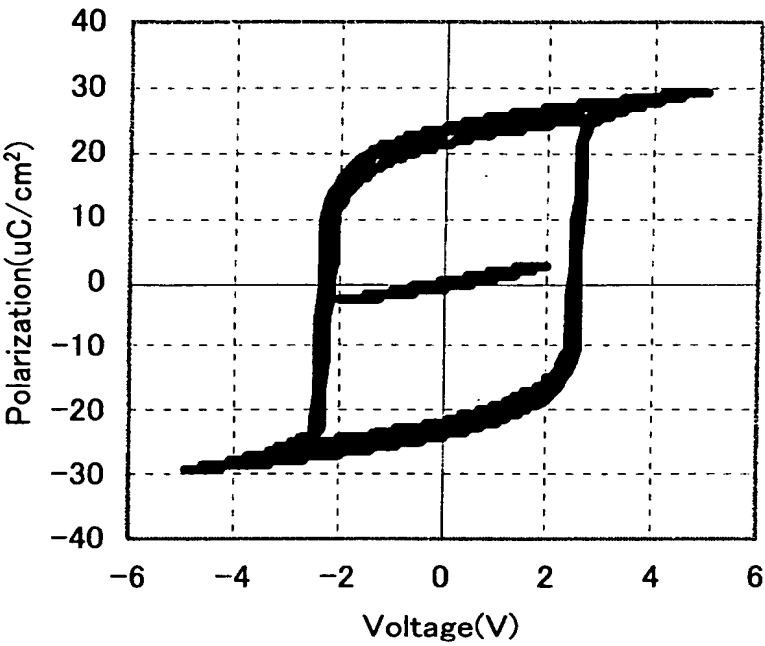


FIG. 43B

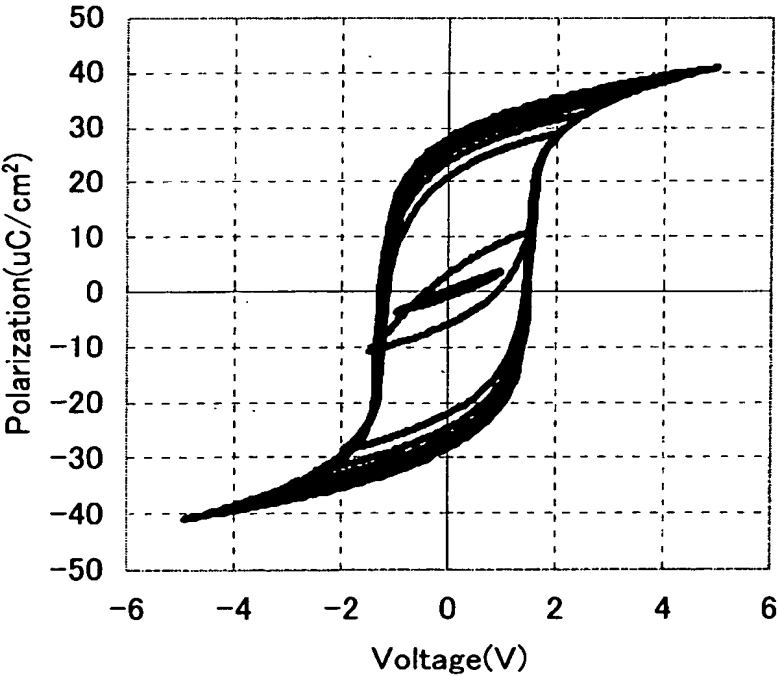


FIG. 44

ELEMENT	ATOMIC WEIGHT	VALENCE	ATOMIC RADIUS (Å)	BOND ENERGY(M-O) (kcal/mol)	IONIC ENERGY (eV)
		(IONIC (Å)) RADIUS (Å))			
Pb	207.2	+2(1.08),+4(0.78)	1.33	38.8	7.416
Zr	91.224	+4(0.72)	1.6		6.84
Ti	47.88	+2(0.86),+3,+4(0.61)	1.47	73	6.82
Nb	92.906	+3,+4,+5(0.64)	1.47		6.88
O	54.36	-1,-2(1.4)			13.618

FIG. 45A

BROWN MILLERITE STRUCTURE (ABO_{2.5})

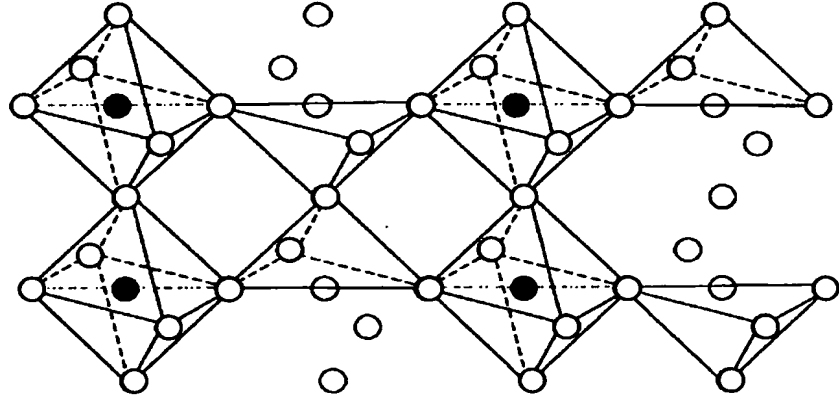


FIG. 45B

POSITIVE ION VACANCY

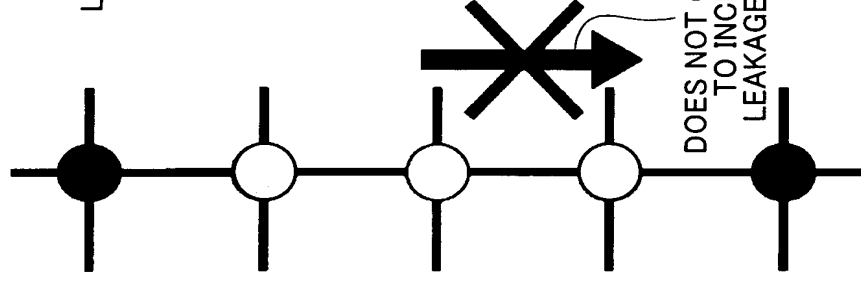


FIG. 45C

NEGATIVE ION VACANCY

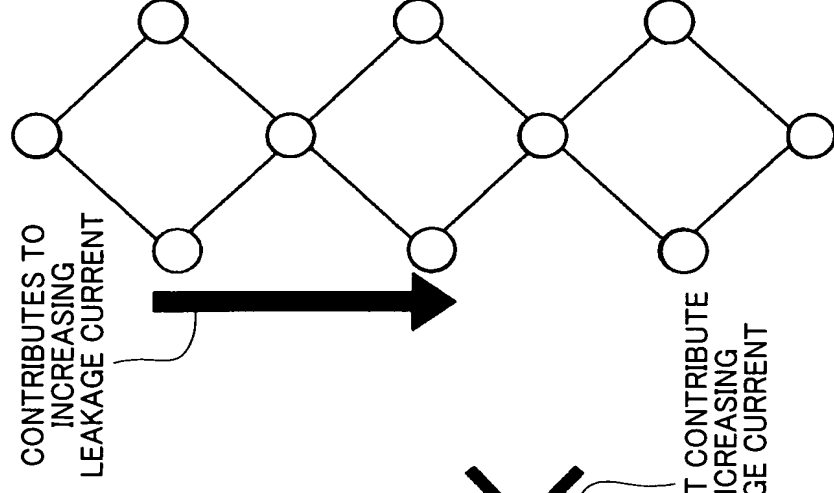
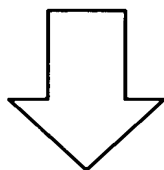
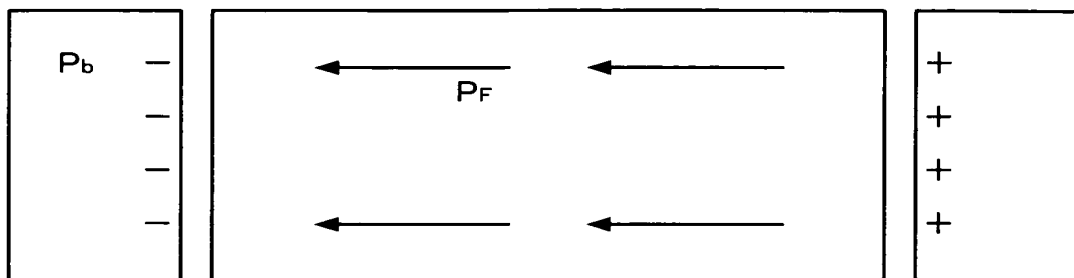
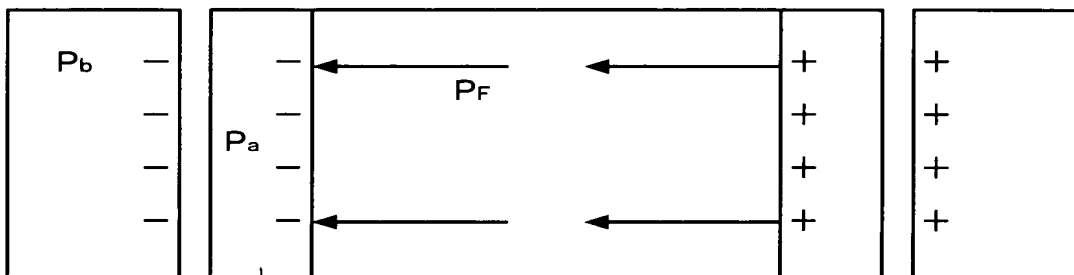


FIG. 46

POLARIZATION



LEAVE UNDER T_c



P_a ACTS IN A DIRECTION TO CANCEL P_F